WDO

ONTARIO
WASTE DIVERSION
ORGANIZATION

Report to the

Minister of the Environment

Achieving Sustainable Municipal Waste Diversion Programs in Ontario

1 September 2000

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Secretariat to WDO:

CSR
CORPORATIONS SUPPORTING RECYCLING

Prepared on behalf of the
Waste Diversion Organization (WDO) by
CSR: Corporations Supporting Recycling
Secretariat to the WDO

WDO September 1 Report
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September 1, 2000

Introductory Remarks from the Chair

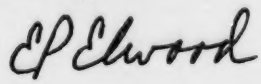
This report to the Minister of the Environment, delivered as requested by September 1, is the culmination of nearly a year of hard work and incredible dedication on the part of hundreds of individuals: elected officials, municipal staff, industry personnel, environmental organizations, the staff of CSR: Corporations Supporting Recycling, contracted consultants and organizations throughout Ontario implementing the 75 projects funded by the Waste Diversion Organization (WDO) that have been approved to date.

It is with pride that, on behalf of the Board of Directors, I commend and thank those who worked side-by-side as public and private sector colleagues, sometimes in spirited debate, always with an eye on the goal, to ensure that the WDO would meet or exceed the challenges set out for us in the Memorandum of Understanding.

We believe that the recommendations set out in this report will allow for a significant leap forward in achieving sustainable residential waste management programs in Ontario. It is a plan that we believe is both fair and equitable. It is a plan that has gained support from industries and municipalities. It is a plan that, to succeed, hinges on the support of the Province of Ontario, too. We must look to the province to establish the enforcement mechanisms necessary to ensure a level playing field is in place for all industry sectors that contribute products or packaging to the residential waste stream. Without this essential component, the WDO cannot continue, and the work we've done will have been for naught. We trust the province will take swift and decisive action to ensure this is not the case.

In these final words, I would like to convey my personal and heart-felt appreciation to all who shared with me the WDO experience and who brought us to where we are today. To the Board of Directors, the co-chairs and members of the committees and task groups, and the executive and staff of the WDO Secretariat—you have been a pleasure to work with and it is with regret that with the submission of this report and following the October 11 board meeting, I complete my current duties as chair. I wish you every success in continuing to work together as a team of municipal, industry and environmental organization representatives, to build the best residential waste management system in the world.

Yours truly,



E. Peter Elwood
Chair

September 1, 2000

Message from the CEO

I am very pleased to have this opportunity of adding my comments to those of our WDO Chair, Peter Elwood.

The WDO "process" has been a challenging but rewarding assignment for those of us at CSR: Corporations Supporting Recycling who have been supporting the WDO as the Secretariat. I am proud of what our CSR/WDO team has accomplished in tackling the tasks set out for us in the Memorandum of Understanding and I would like to thank them, as well as all the others who have helped us in this nine-month journey.

With the delivery of this report, "Achieving Sustainable Municipal Waste Diversion Programs in Ontario," to the Minister of the Environment, CSR/WDO completes a major task. But our mission is far from over. We will continue to work on behalf of waste diversion efforts in Ontario, most particularly to help implement, monitor and evaluate the 75 municipal projects that the WDO approved for funding. The results of these, and projects yet to be approved under the Round Three Call for Proposals, will advance our knowledge of how to boost provincial diversion levels even more.

In addition, we will be initiating discussions with key stakeholders on the matter of the governance of the WDO. We will be continuing, in cooperation with the Association of Municipalities of Ontario, the detailed work required to fine tune the funding models and we will be meeting with industry groups to discuss how to assess costs. All of this work and more will culminate in the activity report to the Minister due in February 2001.

In the meantime, we look forward to a positive response from the Minister of the Environment and other stakeholders on the recommendations contained in this report. As you read through it, you will find that it is the product of a rich collection of provincial waste diversion data combined with a great deal of thought from a wide range of public and private sector participants on how to achieve sustainable diversion objectives and how to fund municipal waste diversion programs in Ontario.

We recognize that some readers who may not have been close to the process could find the depth and breadth of this body of work a bit of a handful. If this is the case, we invite you to contact the CSR/WDO staff. We will be pleased to provide clarification.

As a final note, I would like to acknowledge the hard work and dedication of the WDO/CSR team of staff and consultants who have been dedicated to the success of the WDO. Please note their names on the following page.

As always, we welcome your comments.
Yours truly,

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CEO

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Executive Summary

Purpose of this Report

This report is submitted to the Ontario Minister of the Environment in fulfillment of the requirement of Part IV D (4) of the Memorandum Understanding (MOU), which outlines the roles and responsibilities of the Waste Diversion Organization (WDO).

The report includes the final recommendations of the WDO Board of Directors concerning the continuation of the WDO and of the programs described in the MOU, as well as options for the long-term sustainability of these programs. The estimated waste diversion expected to be achieved through the programs supported by the WDO and the costs associated with the implementation of these programs are also addressed.

Fulfillment of the Further Requirements of the MOU

The WDO has made very significant progress in completing the full range of tasks set for it in November 1999 and many of these accomplishments are outlined in this report. Key tasks that remain to be finished over the next six months include:

- implementation, monitoring and evaluation of the 75 projects approved for funding by the WDO as of August 30, 2000 at a cost of $1,517,880;
- selection, awarding, implementation, monitoring and evaluation of a final round of WDO project funding at a cost of $ 717,720;
- revisions, as required, to the recycling, organics and HSW Interim Five-Year Plans based on the results of these WDO-funded projects and the ongoing work of the WDO Secretariat;
- preparation of a report and recommendations from the WDO Board on the future governance structure of the WDO, should the permanent arrangements required for continuation of the WDO be put in place by the Government of Ontario; and
- preparation of the audited financial statements for the first fiscal year of the corporation which ends December 31, 2000.

A year-end report including these elements and a summary of the year-one activities of the WDO will be submitted to the Minister of the Environment no later than February 28, 2001.

Projected Waste Diversion From WDO Supported Programs

The Provincial Waste Diversion Goal of 50%

The Government of Ontario has established a target to decrease the amount of waste going to disposal by 50% compared to the amount of waste going to disposal for the base year of 1987. This target applies to the combined total of residential, industrial, commercial and institutional (IC&I) solid wastes.

The WDO supports this overall provincial diversion goal and can make an effective contribution to achieving this by providing financial and technical assistance to municipally-sponsored diversion programs targeted at the *residential* waste stream. In addition to reporting on progress being made towards this historic goal, the WDO should also report on the annual waste diversion rate achieved by municipalities on a current waste flow basis.

What Would It Take to Get to 50% Diversion of Residential Waste?

Using data reported by municipalities representing 99% of residential waste in the province, the WDO has determined that approximately 27%, or 1.2 million tonnes of residential waste generated in Ontario were being diverted through recycling, composting and special waste programs in 1999. Having established the current diversion baseline for 1999 at 27%, the WDO looked forward to 2005 to determine the level of diversion that would be necessary to achieve 50% residential diversion measured on a current flow basis. It was calculated that about 1.1 million new tonnes of diversion would be required to achieve this target and based on this, detailed interim five-year plans were prepared for each material stream.

The significant majority of this new diversion would need to come from expanding recovery of yard, garden and food wastes for which no responsible industry sector has been identified to share these costs.

Our analysis to date suggests that attaining a 50% diversion of residential waste within this five-year timeframe would require fundamental technical, social and policy shifts akin to a 'step change' in behaviour from Ontario citizens and from industry to move to a next generation diversion system. The elements of such a change would have to include consideration of:

- modifications of the Ontario 3Rs Regulations requiring municipalities to divert an expanded organics stream;
- regionally-appropriate disposal bans on organic material;
- expansion of bag limit and user fee programs to all municipalities;
- higher landfill tipping fees to recognize the true market value of disposal;
- extensive public education and ultimately public acceptance of a doubling of their efforts at organic diversion, including overcoming householder resistance to sorting and storing kitchen wastes;
- fast tracking site approvals and permits for the design and construction of the new facilities required to process the 700,000 new tonnes of organic material that would need to be diverted;
- the need for rapid agreement to an equitable cost-sharing formula for organics diversion among industry, municipalities and the province to provide an economic base for the immediate capital expansion program that would be required;
- possible need to re-negotiate a large number of municipal contracts with waste management contractors likely resulting in additional cost;
- enforcement mechanisms to underpin the financial contributions expected to be required from industry;
- redesign of products and packaging to reduce waste and to facilitate diversion; and
- changing production processes to increase utilization of recovered materials.

Given these challenges, and in particular the lack of an agreed to cost-sharing formula for funding organic diversion, achieving a 50% diversion rate in the residential waste stream within five years on a current waste flow basis is not likely to be achieved.

Waste Diversion Expected to be Achieved from Recommended WDO Programs

Based on the five-year plans developed by the task groups, the WDO reached the following conclusions:

Regarding the recycling stream:

Based on the infrastructure already in place, the proposed financial support from industry and assuming the availability of adequate markets to absorb new materials, a 50% diversion rate for materials recycling is considered aggressive but achievable.

Regarding organics:

It is the consensus position of the WDO, that a 50% diversion rate for organics is not likely to be achieved over the next five years, especially given the lack of an agreed to funding support system for such efforts. Significant progress can be achieved, however, if this key funding issue is resolved.

Regarding HSW:

While the goal of the WDO is ultimately to reduce the generation of HSW, the aggressive diversion rate for HSW is considered achievable. Given the small quantities involved, however, this will not make a significant contribution to the overall diversion target.

As a result of these broad conclusions and the feedback received in response to the WDO Interim Report, the recommended waste diversion goal for WDO supported programs, as detailed in this report, would be an estimated 44% of residential waste on a current flow basis by 2005.

When calculated using the historic diversion calculation methodology used by the province, this is equivalent to a 46% diversion rate based on the 1987 baseline. In turn, when this projected historic residential rate is combined with the reduction from disposal rate achieved within the IC&I sector (which is the target established for the province-wide measurement system as described in Section 4.1), there is a strong possibility of achieving the overall 50% waste diversion rate set by the province.

Projected Costs of Achieving This Diversion

Municipal Recycling

The WDO estimated the net cost of collecting, processing and marketing recyclables in 1999 to be $99/tonne. Municipalities across the province spent approximately $66.0 million on recycling programs in 1999 to recover 667,000 tonnes.

The cost of recycling in future years will depend upon the total quantity of materials recovered, the gross cost of collection and processing and the value of the 'basket of goods' revenue in any given year. The recommended diversion plan for municipal recycling projects is that an additional 338,000 tonnes of recyclables will be recycled by 2005, resulting in 1.0 million tonnes of annual diversion. The projected annual net operating cost of this system in 2005 is estimated to be $64.0 million, if market prices for recovered material remain strong.

Organic Waste Diversion

Ontario households diverted an estimated 393,000 tonnes of organic waste, primarily leaf and yard wastes, in 1999. The cost of the existing organics management system is estimated at $25million/year, based on a survey of Ontario municipalities in June 2000.

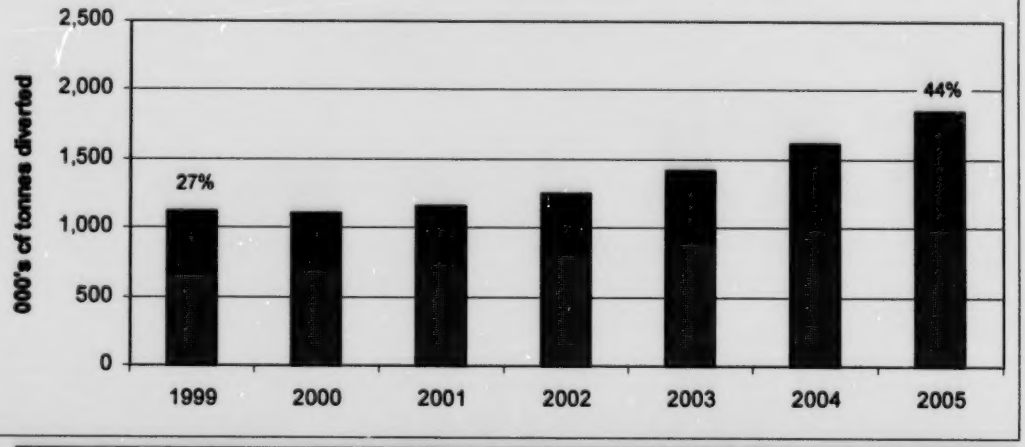
The recommended plan for organics diversion, which involves the aggressive addition of 460,000 new tonnes of diversion (extending recovery into food wastes and multi-family housing at higher costs) over the next five years, would have capital costs estimated at $350 million, and ongoing annual operating costs for the organics system estimated at $119 million/year (including amortized capital) in year five. These projected costs are net of any revenues from the sale of compost, but do not reflect any potentially offsetting savings in the reduction of organic waste going to disposal.

HSW Management

Based on the collection of 6,360 tonnes of HSW in 1999, the annual cost of operating these programs is estimated between $8 and $10 million. The average cost per tonne to dispose of HSW material is estimated to be approximately $1300/tonne.

It is projected that by 2005 the quantity collected will increase to approximately 9,800 tonnes at a projected annual operating cost of $13 to $17 million.

Figure 5.5
Cost Projections for WDO Recommended Diversion Programs



System Cost $millions

	1999	2000	2001	2002	2003	2004	2005
HSW	$10.0	$10.0	$11.0	$12.5	$14.0	$15.5	$17.0
Recycling	$88.0	$ 41.4	$40.5	$47.0	$53.9	$83.1	$84.0
Total	$101.0	$79.2	$ 84.1	$ 96.4	$125.3	$162.3	$199.5

The projected decline in recycling costs in 2000 are based largely on current prices paid for recovered printed materials. Actual costs in this and future years are subject to a wide range of variables including the quantities recovered, material mix and prevailing market prices.

Total Diversion Systems Costs – Five-Year Projections

The projected annual net operating cost of achieving 50% diversion of residential waste is $260 million or approximately $117 per tonne. Given these costs to divert waste, municipalities likely would be faced with higher overall waste management costs under a 50% diversion scenario than the alternative of disposing of some of this material as waste.

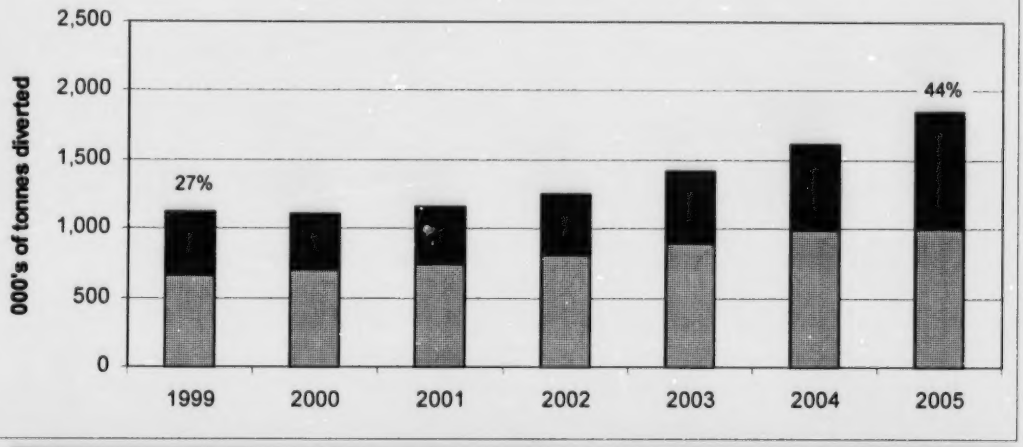
The recommended plan for organics diversion, which involves the aggressive addition of 460,000 new tonnes of diversion (extending recovery into food wastes and multi-family housing at higher costs) over the next five years, would have capital costs estimated at $350 million, and ongoing annual operating costs for the organics system estimated at $119 million/year (including amortized capital) in year five. These projected costs are net of any revenues from the sale of compost, but do not reflect any potentially offsetting savings in the reduction of organic waste going to disposal.

HSW Management

Based on the collection of 6,360 tonnes of HSW in 1999, the annual cost of operating these programs is estimated between $8 and $10 million. The average cost per tonne to dispose of HSW material is estimated to be approximately $1300/tonne.

It is projected that by 2005 the quantity collected will increase to approximately 9,800 tonnes at a projected annual operating cost of $13 to $17 million.

Figure 5.5
Cost Projections for WDO Recommended Diversion Programs



System Cost $millions	1999	2000	2001	2002	2003	2004	2005
HSW	$10.0	$10.0	$11.0	$12.5	$14.0	$15.5	$17.0
Organics	$25.0	$27.8	$32.6	$36.9	$57.4	$83.7	$118.5
Recycling	$66.0	$ 41.4	$40.5	$47.0	$53.9	$63.1	$64.0
Total	$101.0	$79.2	$ 84.1	$ 96.4	$125.3	$162.3	$199.5

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Total Diversion Systems Costs – Five-Year Projections

The projected annual net operating cost of achieving 50% diversion of residential waste is $260 million or approximately $117 per tonne. Given these costs to divert waste, municipalities likely would be faced with higher overall waste management costs under a 50% diversion scenario than the alternative of disposing of some of this material as waste.

The overall annual operating cost of achieving the WDO-recommended diversion rate of 44% is projected to be $199.5 million in 2005. At a projected overall cost per tonne of $97, this is significantly less expensive than the cost estimated for the 50% overall diversion scenario. It is interesting to note that the cost of attaining the last few percentage points of diversion is very high. Specifically, the cost for the additional increment of diversion (i.e. the last 6%), jumps to $189/tonne. Most of this additional cost is directly related to managing organic materials for which industry would not be a major contributor. At $97 per tonne average cost, the recommended WDO scenario is also expected to be cost competitive with the projected future costs to manage these materials as waste (estimated to be approximately $100 per tonne).

WDO Program Delivery and Administrative Costs

In addition to these direct municipal program costs, there will be additional expenses related to raising funds through an appropriate industry stewardship organization and for the delivery and administration of WDO agreed to programs. These costs will be built into the calculation of fees to be required from industry. Extraordinary program start-up costs such as legal, membership recruitment and registry, research, training, information technology and other program development costs will also be incurred. Allowance also should be made for the fact that it will be inevitable that contributions due from some obligated companies (i.e. small importers) will be delayed. In general, these start-up program delivery and administrative costs can be expected to represent a higher percentage of total program costs in the early years of a program and to decline (as a percentage of the total program budget) in subsequent years, as diversion programs mature. Experience from other jurisdictions has shown that these costs will range from 10% to 20% of municipal support payment costs, depending upon the complexity of the program, the level of support services provided by the agency and the maturity of the organization and the programs for which it provides support.

Key Conclusions Reached by Industry Regarding the Industry Share of Costs

As agreed to in the WDO Guiding Principles, it is the responsibility of industry to identify an appropriate financing mechanism for raising the funds required to support agreed to WDO programs. Key conclusions reached by industry representatives related to packaging wastes include:

1. A level playing field regulation is essential to raise the share of funds expected to be contributed from industries using packaging materials.

2. Industry must retain responsibility for raising and distributing its share of the costs concerning agreed to WDO programs.

3. The brand owner/first importer is the most appropriate point of obligation.

4. The widest possible net of consumer packaging and packaged consumer products (whether used in the home or similar products sold in IC&I accounts) should be included in the enforcement mechanism to ensure a level playing field and to lower the rate of contribution required from all participating companies.

5. A sales-based levy represents the most administratively efficient mechanism for calculating individual company contributions.

6. There should be no minimum threshold exemptions set out in the enforcement mechanism but this issue should be addressed within the rules of the designated industry stewardship organization.

Industry representatives from the HSW sector agree that a level playing field regulation is essential to secure financing for the WDO program. Discussions are continuing on funding issues specific to this sector.

Industry representatives from the printed paper sector do not support the need for regulation for this sector. It is expected that strong market demand and prices for this material will support efficient municipal recovery costs. This sector prefers entering into a voluntary agreement regarding the activities of the WDO.

Summary of Key Recommendations in the Report

Numerous recommendations are made throughout the body of the report. A summary of the key recommendations related to specific issues identified in the MOU follows:

Continuance of the WDO

1. The province should put in place arrangements for the continuation of the WDO for the purpose of implementing the programs outlined in this report.

2. The waste diversion goals and the financial contributions expected from industry as outlined in this report cannot be achieved through voluntary arrangements. The continuation of the WDO itself will require the province to implement adequate enforcement mechanisms as outlined in this report.

3. The ongoing need for continuing the proposed industry and municipal funding arrangements should be formally reviewed within a period of no longer than five years.

4. Industry should continue to be responsible for the collection of its agreed to share of WDO program costs and these funds should be dedicated solely to these programs and related program delivery and administrative costs.

5. The WDO should complete a lifecycle inventory of the environmental costs and benefits of achieving a 50% waste diversion goal on a province-wide basis as well as in a representative sample of Ontario municipalities.

Municipal Recycling

6. The WDO should implement a program of financial and technical assistance to Ontario municipalities to support the continued growth and to improve the efficiency and cost effectiveness of residential materials recycling programs.

7. Industry should provide financial support equal to 50% of the aggregate provincial net costs of municipal recycling programs.

8. Funds provided to municipalities through the WDO should be calculated on the basis of the municipal funding allocation model developed (and being refined) by the WDO.

9. The priority areas for continued WDO technical assistance include:

- optimization of the provincial network of material recovery facilities (MRFs);
- expanded and improved multi-family recycling programs;
- strengthening of markets for recovered materials to accommodate the 342,000 new tonnes projected to be recovered; and
- closer integration of recyclables, organics and HSW diversion systems to reduce total system costs.

Recyclable Beverage Alcohol Containers

10. The LCBO should contribute $5,000,000 per year (on behalf of the beverage alcohol industry that it represents at retail) to support the recovery of recyclable beverage alcohol containers and the programs of the WDO.

11. Changes should be made to the RBAC funding program including:

    - funding payments should be limited to containers recovered from residential sources only;
    - funding payments should be based on the total quantities diverted to beneficial uses only
    - (i.e. diverted from landfill);
    - data reporting systems should be strengthened and be subject to audit by the WDO.

Organic Waste Diversion

12. The costs of increasing organic waste diversion should be shared primarily between municipalities and the province. The WDO should implement a program of financial and technical assistance to Ontario municipalities that includes sanitary paper and other paper products in municipal organic waste diversion programs.

13. The province should take a lead role in the development of product quality standards and procurement guidelines that will be critical to creating additional market demand for products made from recovered organics.

14. The WDO should provide technical support to further the growth of organic diversion programs by:

    - supporting research and demonstration projects designed to overcome technical barriers to recovering and processing organic wastes;
    - providing communications and education programs in support of consumer behavior change; and
    - integrating expanded organic systems with existing waste diversion efforts.

HSW Management

15. The WDO should implement a program of financial and technical assistance to Ontario municipalities for HSW management to improve the efficiency and cost effectiveness of these programs.

16. The costs of municipal HSW programs should be shared on a 50/50 basis between industry (through the WDO) and municipalities.

17. Municipalities should retain operational responsibility for local HSW administration, collection and arranging for post-collection treatment.

18. Materials included for WDO funding should be reviewed on an annual basis according to defined scientific criteria.

Communications

19. The provision of advertising space in daily and community newspapers at no charge to municipalities should be continued and the value of this contribution taken into consideration in any calculation of financial contribution that might be required from this sector.

20. The WDO should provide communication and education support for the waste diversion programs operated by Ontario municipalities.

21. The WDO should maintain a co-ordinated, province-wide communications program in support of Ontario-wide diversion campaigns and to inform key stakeholders of the activities and results achieved by the WDO.

Recommendations On Long-Term Sustainable Funding Mechanisms

Industry Enforcement Mechanisms

22. The Province of Ontario should adopt a regulation requiring brand owners or first importers of all packaged consumer products sold in the province to recover their packaging material, or, alternatively, to be a member in good standing of a WDO-approved industry packaging stewardship organization which takes on this responsibility on their behalf.

    Key elements of proposed packaging regulation are:

    (a) the brand owners or first importers of packaged consumer products sold in Ontario should be required to implement and finance programs that recover their packaging, independent of municipal waste management programs, to meet specified performance targets and to provide annual reports on these programs to the WDO;
    (b) in-store packaging (packaging applied in the store, including bags) should be included in the regulation;
    (c) agreement that an acceptable form of alternative compliance would be membership in good standing of a WDO-approved industry stewardship program that provides financial and technical support to municipalities operating packaging waste diversion programs;
    (d) retailers should require certification from their suppliers that all packaged products delivered to or purchased for their stores are included in an approved stewardship program; and
    (e) penalties for brand owners and first importers not in compliance should include fines plus any stewardship fees due for previous years.

23. The Province of Ontario should adopt a regulation requiring brand owners or first importers of all designated HSW products sold in the province to recover designated residual HSW materials, or, alternatively, to be a member in good standing of a WDO-approved industry stewardship organization which takes on this responsibility on their behalf.

Key elements of proposed HSW regulation are:

(a) to require brand owners or first importers of consumer HSW products sold in Ontario to implement and finance programs to manage designated post-consumer residual materials, independent of municipal waste management programs, and to provide annual reports on these programs to the WDO;
(b) to include in the definition of HSW materials those materials agreed to by the WDO HSW Task Group;
(c) to agree that an acceptable form of alternative compliance would be membership in good standing of a WDO-approved industry stewardship program providing financial and technical support to municipalities operating HSW waste management programs;
(d) that retailers should require certification from their suppliers that all designated HSW products sold in their stores are included in an approved stewardship program; and
(e) penalties for brand owners and first importers not in compliance would include fines plus any stewardship fees due for previous years.

24. Publishers, importers and/or distributors of designated printed materials sold or distributed in the Province of Ontario should recover their materials, or be included as members of a WDO-approved industry stewardship organization.

Key elements of the proposed printed material agreement are:

(a) to include newspapers, magazines, advertising flyers, fine papers, catalogues and directories in the agreement;
(b) where the cost of recovering these materials through efficient municipal recycling programs is greater than the revenue received from sale of these materials, publishers, importers and/or distributors contribute up to 50% of this cost differential;
(c) an approved industry stewardship organization determines, on an annual basis, the appropriate share of costs between newspapers, other printed paper and packaging materials;
(d) to use the proposed WDO funding allocation model in determining the appropriate cost allocation subject to:
    - WDO agreement on key model assumptions regarding appropriate material densities, cost allocations by weight/volume, and material revenues used to determine each industry's share of financial contributions to support WDO programs. These assumptions should be consistent with those used for determining the municipal funding allocation;
    - completing field tests of the proposed model for a minimum of 10 municipalities and for estimating the net municipal recycling costs for newspapers, other printed paper and for packaging for the province as a whole; and
    - incorporating a mechanism to take into account surplus revenue from the sale of recovered newspapers in any given year against calculated net costs of newspaper recycling in subsequent years.
(e) to give a credit to offset a portion of the calculated newspaper share of WDO costs for newspaper advertising space made available to Ontario municipalities at no charge to promote waste reduction and diversion;
(f) to allow the equivalent of at least $1.3 million of the in-kind contribution to constitute part of the financial contribution of industry to the 50% share of municipal program costs; and
(g) to make a financial contribution reflecting a fair share of WDO/industry stewardship organization costs related to communications, technical support and administration.

Municipal Enforcement Mechanisms

25. The Government of Ontario should implement mechanisms to ensure that municipalities establish the programs recommended by the WDO in support of the province's waste diversion and HSW management objectives and to make the costs of these programs visible to their residents.

Key elements of municipal enforcement mechanisms are:

(a) to extend minimum waste diversion service requirements to include expanded organic waste diversion and appropriate HSW management services;
(b) to enact regionally appropriate bans on organic waste disposal in landfill sites;
(c) to require municipalities to calculate the costs of local waste management and waste diversion services and to notify residents of these costs; and
(d) to require those municipalities that achieve less than a 50% waste diversion rate (based upon the base year of 1987) by 2005 to implement incentive schemes (such as bag limits or user fees), or alternatively, to have their WDO financial contribution reduced.

Introduction

This report is submitted to the Ontario Minister of the Environment in fulfillment of the requirement of Part IV D (4) of the Memorandum of Understanding (MOU), which sets out the roles and responsibilities of the Waste Diversion Organization (WDO).

The data and views presented in this report draw heavily from the work completed by the committees and task groups established by the WDO, as outlined in Appendix 2. A broad cross-section of individuals from the public and the private sectors provided substantial input to this report. Interim Five-Year Plans for recycling, household special waste (HSW) management and organics diversion, prepared with the assistance of three tasks groups struck by the WDO Programs Committee for this purpose, are included as Appendix 4. While this body of work provides the critical foundation for the recommendations outlined in this report, these documents remain "works in progress." The WDO will continue to refine these reports as new information is received from WDO-funded projects and feedback is received from other stakeholders in response to this report. Each of the task group reports was prepared independently resulting in the differences in style and format.

The key data, analysis and recommendations outlined in these Interim Five-Year Plans were subsequently reviewed by the WDO Funding and Regulations Committee, which in turn forwarded its recommendations to the WDO Board of Directors. The main body of this report, therefore, represents the views and recommendations of the WDO Board of Directors, and not necessarily those of individual members of the WDO committees and task groups.

It must also be emphasized that the WDO Board of Directors recognized that the cost projections in this report can only be projections. There are any number of factors which can be expected to influence the costs that actually will be included by municipal diversion programs and the revenues that will be received from the sale of recovered materials in the future. Recognizing this, the participants in the WDO process adopted the pragmatic view that "the numbers will be what the numbers will be." That is, the WDO calculations that will be made in future years will be based on the best available data that can be agreed to by the participants involved in the process at that time.

Every effort has been made through the WDO committee work to access and utilize the best available data from all key stakeholders in the province. The 1999 cost survey which forms the basis for the financial projections, for example, was conducted with the assistance of the CAO Municipal Benchmarking Initiative, Municipal Waste Integration Network (MWIN), Association of Municipal Recycling Coordinators (AMRC), Composting Council of Canada (CCC) and Recycling Council of Ontario (RCO). We are confident that this data represents the most thorough and comprehensive baseline yet established for Ontario's waste diversion efforts.

Furthermore, projects approved in the WDO Round One funding gave significant priority to improving further this data base. The results from these efforts will be used to continue to refine existing planning assumptions.

Data presented in the main body of the report has been kept brief. More detailed analysis for each waste stream is provided in the Five-Year Plans.

It is recommended that priority attention be given to the broad policy recommendations made and methodologies proposed for calculating cost sharing, rather than the initial data estimates used throughout the report.

Part I

Requirements of the MOU That Have Been Completed

1.0 Part I – Requirements of the MOU that Have Been Completed

1.1 Brief Overview of WDO Board of Directors & Committee Work

In preparing the recommendations outlined in this report, the WDO Board has received advice, guidance and technical support from some of the leading experts in waste diversion in the Province of Ontario. Appendices 1 and 2 provide an overview of the committee structure which underpins the work of the WDO and identifies the individuals who have given so generously of their time to this effort.

The committees and the task groups established by the WDO have provided the board with a wide range of recommendations on all of the key topics set out in the guiding Memorandum of Understanding (MOU). It must be emphasized, however, that the recommendations set out in this report represent the views and decisions taken by the Board of Directors of the WDO.

Board of Directors

Five meetings took place as of August 9.

Accomplishments:

- ✓ Reviewed and approved the WDO incorporation, committee structure and committee representation.
- ✓ Reviewed and approved the Terms of Reference for all committees and task groups.
- ✓ Reviewed and approved the WDO Budget.
- ✓ Reviewed and approved the Guiding Principles for the long-term funding formula.
- ✓ Reviewed and approved the LCBO (now Recyclable Beverage Alcohol Container Support Programs [RBAC]) disbursement.
- ✓ Reviewed and approved the first and second quarter newsletter, "The WDO Link."
- ✓ Reviewed and approved the financial support for Compost Awareness Week.
- ✓ Reviewed and approved the Programs Committee's "Round One" Projects cost allocation.
- ✓ Reviewed and approved the "Round One" selections as recommended by Programs Committee and task groups.
- ✓ Board and committee representatives met with Environmental Non-Government Organizations
- ✓ (ENGOs).
- ✓ Reviewed and approved the "Round Two" Projects funding envelope.
- ✓ Reviewed and approved the "Round Three" Projects funding envelope.
- ✓ Reviewed and accepted the report on WDO consultation process.
- ✓ Reviewed and approved the Interim Report to the Minister of Environment.
- ✓ Reviewed and approved Financial Statements to June 30, 2000.
- ✓ Reviewed and approved the recommendations from the WDO Programs, Funding and Regulations and Communications Committees related to WDO programs and long-term sustainable funding mechanisms.
- ✓ Reviewed and approved September 1 Report to Minister of the Environment.

1.1.1 Programs Committee

Terms of Reference

The Programs Committee has undertaken three key activities:

- the development of long-term (five-year) plans for meeting Ontario's waste diversion goals in a sustainable and cost effective manner;
- identifying and allocating immediate financial and technical support for opportunities to improve the efficiency and cost effectiveness of existing recycling and waste diversion programs and to establish HSW management programs in unserviced areas; and
- managing the disbursement of the Recyclable Beverage Alcohol Container (RBAC) funds to Ontario municipalities.

The Programs Committee comprises 17 members from across Ontario. They are senior elected officials, municipal professional staff, corporate presidents, senior industry specialists and commissioners of public works.

Three task groups have supported the Programs Committee, each specializing in a particular field of waste diversion:

- The Optimization Task Group focused on optimizing the existing municipal recycling system through improved diversion, collection efficiency, rationalization of processing centres and market development.
- The Household Special Waste (HSW) Task Group took on the responsibility of developing a long-term strategy to manage HSW and of ensuring the immediate introduction of between five and 10 HSW depots for areas of the province currently not serviced.
- The Organics Task Group tackled the challenge of developing a strategy to divert organic wastes, a key component in the plan for achieving the province's 50% waste diversion goal.

Together, these task groups comprise more than 60 of the most experienced industry and municipal technical specialists, representing a sound cross-section of diversion expertise in Ontario. The co-chairs of each task group also sit on the Programs Committee to provide continuity.

Seven meetings took place as of August 4th.

Accomplishments:

- ✓ Prepared a waste diversion background report to establish a baseline for all WDO participants.
- ✓ Delivered 1999 Recycled Beverage Alcohol Container (RBAC) funding to municipalities one month ahead of schedule; streamlined the process for distribution of RBAC 2000 funds and recommended changes for RBAC 2001.
- ✓ Developed the guidelines and merged the priorities established by the task groups for the distribution of municipal program support funds.
- ✓ Completed the 'Round One' Call for Proposals resulting in the approval of 35 innovative, transferable projects at a cost of $583,000.
- ✓ Completed the 'Round Two' Call for Proposals from municipalities resulting in the approval of 40 additional innovative projects at a cost of $934,000. With leveraged municipal support, the total project value of Rounds One and Two exceeds $2.5 million.

- ✓ Set date of September 21st for issuance of the third and final round of WDO project funding.
- ✓ Approved support for nine special waste depots in unserviced areas according to the directive contained in the Memorandum of Understanding.
- ✓ Undertook a province-wide survey of recycling, HSW and organic diversion costs for 1999 in co-operation with the Municipal Chief Administrative Officers' (CAO) Benchmarking Initiative. Working cooperatively with the Municipal Waste Integration Network, Recycling Council of Ontario, Composting Council of Canada and Association of Municipal Recycling Coordinators to collect data.
- ✓ Developed material-specific funding formula considerations for organics and HSW.
- ✓ Prepared the five-year forecasts of residential recycling, organics and HSW recovery rates and associated costs, and combined projections into three system-wide diversion scenarios. Recommended a blended diversion scenario that achieves a 44% diversion of residential waste on a current flow calculation basis.

Integrating Task Group Long-Term Plans

The work of the Programs Committee often required integrating the work of the three task groups. This was particularly true during the preparation of the Interim Five-Year Plans. Achieving the recommended WDO diversion goal is dependent upon both materials recycling and organics diversion realizing their goal, as established in their individual work plans. (Since HSW comprises less than one percent of the waste stream, increased diversion of this material cannot contribute significantly to the quantitative diversion goal.) If either the recycling or organics streams are unable to meet their individual goals, then the overall goal for which the Programs Committee is responsible cannot be met.

By way of example, the Organics Task Group, upon completing its preliminary work, advised the Programs Committee that the original target set for the diversion of 'new' tonnes of organic wastes was not practical. The Programs Committee took a more holistic view of the entire Ontario system and directed the Curbside Optimization Task Group to re-examine whether it would be possible to increase diversion efforts in its area of responsibility (recycling diversion). The Optimization Task group examined the situation and subsequently modified its planning efforts to identify potential diversion of an additional 112,000 tonnes of residential recyclable materials. This change is now reflected in the waste diversion scenarios set out in this report.

Immediate Support For Municipal Waste Diversion Programs

One of the primary functions of the Programs Committee has been to provide immediate assistance to expand and improve current municipal waste diversion systems. Section 1.2 provides details of the programs funded by the WDO through its Rounds One and Two Proposal application processes. Section 2.1 outlines the priorities that have been established for Round Three.

The Programs Committee has played a critical role in combining the various program recommendations made by the three task groups into a balanced support program. The committee ensured that the selection process was rigorous and fair and that it maintained a balance of geographic and waste stream considerations. In Round Two, for example, the committee recommended a shift of $60,000 from the programs funding envelope originally approved by the WDO Board from the budgets of the Curbside Optimization and Organics Task Groups to the HSW Task Group to allow for the funding of an important HSW depot in northern Ontario. In Round Three, the committee is considering a similar reallocation of the budget.

In Round One, each task group identified major gaps with respect to the availability of up-to-date cost information for diversion activities in Ontario. Tonnage information is made available annually through the Municipal 3Rs in Ontario Fact Sheet but cost information, on a province-wide basis, was judged insufficient because it was between two and three years old (or in some cases non-existent). To ensure a consolidated approach, the Programs Committee, on behalf of the task groups, co-ordinated an Ontario-wide, 1999 cost survey of recycling, organic and HSW system costs for both single and multi-family dwellings. The survey was conducted with the assistance of the CAO Municipal Benchmarking Initiative, Municipal Waste Integration Network (MWIN), Association of Municipal Recycling Coordinators (AMRC), Composting Council of Canada (CCC) and Recycling Council of Ontario (RCO). The WDO is confident that while not perfect, these data represent the most thorough and comprehensive baseline yet established for Ontario's waste diversion efforts. The results of this survey provide the basis of the1999 costs estimates used in this report.

RBAC Disbursement

The Programs Committee also tackled the distribution of the Recyclable Beverage Alcohol Container (RBAC) funds to municipalities. One of the first actions the committee took involved the calculation and disbursement of funds related to the1999 results. The committee completed the task on February 28, one month ahead of schedule.

Based on a recommendation from the multi-stakeholder Municipal 3Rs in Ontario Fact Sheet / steering group, the Programs Committee linked the annual 3Rs call for municipal diversion information with the preparation undertaken to implement the 2000 RBAC funding program. Consequently, the WDO asked municipalities wishing to be eligible for 2000 RBAC funding to submit information on all 1999 diversion activities—including the requisite glass tonnage information. After a series of notifications, and an extension of the deadline by the WDO Board to allow every opportunity for municipal response, the final response rate to the combined 2000 RBAC survey was the best yet achieved in the five-year history of the program. Response to the joint survey on a tonnage basis jumped from the mid eighties in prior years, to 99.9% for 1999. With the WDO Board's approval, the RBAC funds not disbursed to the 16 municipalities representing the 0.1% that did not respond, were put back into the RBAC pool for redistribution among municipalities that did respond to the joint survey.

As detailed in section 3.2.4, the Programs Committee has identified a number of issues associated with the current criteria and formula for the calculation of the RBAC disbursement. These relate to:

- the possibility of discontinuing the current practice by some municipalities of including the RBAC containers recovered from the industrial, commercial and institutional (IC&I) sectors in the tonnages reported as eligible for funding;
- considering the disqualification in the RBAC calculation of glass that is collected for recycling but ends up in disposal for economic reasons; and
- recognizing unique circumstances arising in demonstration and innovative diversion systems (i.e. wet/dry).

Section 3.2.4 also sets out the recommended procedures for RBAC 2001 payments.

Summary of Round One & Two Projects Funded by the WDO

One of the primary tasks the MOU required of the WDO was for it to identify and provide immediate financial and technical support to expand and improve the cost effectiveness of municipal waste diversion programs.

With input from the task groups, the Programs Committee developed a "Guidelines for WDO Funding" process to ensure a consistent methodology for identifying, evaluating and selecting potential municipal projects for funding. These guidelines provided a framework for each task group to set specific goals and objectives for each material stream, to identify relevant information already in hand, to fast track projects where possible and to call for proposals based on the priorities set by each task group.

Standardized conditions and procedures for funding, such as project timing and the transferability of information were also applied to all applications the task groups received.

By April, the task groups and Programs Committee had finalized the guidelines, allocated budgets and selected priority issues that became the Round One Call for Proposals. The WDO Board made a total of $627,000 available for innovative proposals that focused on recycling and organic data gathering and the establishment of HSW depots for un-serviced areas.

Using the same funding guidelines as a foundation as well as with key learnings from Round One, the task groups developed new priorities and budgets for Round Two. This round focused on larger, innovative demonstration and implementation projects. The value of Round Two exceeded $1 million.

In total, the WDO received more than 200 project applications and 75 were approved for funding. The task groups spent many hours reviewing the merits of each proposal and through a consensus process made their recommendations to the Programs Committee. The committee integrated the task groups' recommendations, occasionally adjusting the budget allocations between projects and identifying opportunities to combine projects or to serve a particular geographic area of the province. The committee submitted these revised recommendations on funding to the WDO Board of Directors for final approval.

Once the board approved the applications, the WDO Secretariat notified successful and unsuccessful proponents and established purchase order agreements with each host municipality. The WDO assigned a project manager to each of these projects to provided contract management and serve as a liaison to the secretariat in evaluating the results of each project.

Table 1.1
Summary of Projects Funded by WDO Programs Committee in 'Round One' and 'Round Two'

Recycling Optimization - Round 1

Project #	Municipality/Organization	Project Name	WDO Funding
OPT-R1-01	Regional Municipality of Halton	Waste Audit	$15,000
OPT-R1-02	City of Peterborough	Waste Audit	$14,000
OPT-R1-03	Regional Municipality of Durham	Waste Audit	$15,000
OPT-R1-04	Township of Augusta	Waste Audit	$8,000
OPT-R1-05	Township of North Glengarry	Waste Audit	$8,000
OPT-R1-06	RMOC	Alternative Collection System	$15,000
OPT-R1-07	All Ontario Municipalities	1999 Diversion Cost Survey in co-operation with CAO Benchmarking Initiative/MWIN/AMRC	$35,000
0PT-R1-08	City of Toronto	Waste Audit	$25,000
OPT-R1-09	Regional Municipality of Sudbury	Waste Audit	$15,000
OPT-R1-10	Regional Municipality of Peel	Curbside Set-Out Study	$10,000
OPT-R1-11	County of Peterborough	Container Vacuum/Crusher Collection Unit	$15,000
		Total Funding OPT Round 1	$175,000

Recycling Optimization - Round 2

OPT-R2-01	Region of Durham	Municipal Waste Composition Estimation Model and Waste Composition Study	$10,000
OPT-R2-02	Region of Halton	Completion of "Municipal Recycling Cost Allocation Model" and "IWM Tool"	$3,000
OPT-R2-03	City of London with Rehrig Pacific Company and CWS	Mixed Recyclables Rollout-Cart Demonstration Project	$50,000
OPT/ORG-R2 02	Markham/Guelph	Baseline Sampling of Material Densities	$5,000
OPT/ORG-R2-01	Markham with York, Toronto, CSR, and Miller Waste	Automated Cart-Based Collection System for Organics, Garbage and Recyclables	$40,000
OPT-R2-04	MRF Optimization Working Group	MRF Optimization Study	$50,000
OPT-R2-05	Northwest Ontario Recycle Association	Compact Your Troubles: Testing Recycling Compaction Collection Vehicle	$25,000
OPT-R2-06	Region of Peel 1	MinPro Crushed Glass Demonstration Project	$10,000
OPT-R2-07	City of Sault Ste. Marie	Residential Waste Audit	$15,000
OPT-R2-08	County of Simcoe	Seasonal Waste Composition Study for Streamed Programs	$15,000
OPT-R2-09	City of Toronto 1	Waste Audits to assess Improvements to Dufferin MRF and Commissioners Street MRF	$10,000
OPT-R2-10	City of Toronto 3	Mixed Broken Glass Market Development Study	$32,000
OPT-R2-11	Region of Sudbury	Multi Family Unit Recycling Enhancement	$10,000
OPT-R2-12	Region of Waterloo	Report on Automated Fibre Sorting Technologies	$25,000
		Total Funding OPT Round 2	$300,000
		Total Funding OPT Rounds 1 & 2	$475,000

Organics - Round 1

Project #	Municipality/Organization	Project Name	WDO Funding
ORG-R1-01	City of Peterborough	Compost facility siting study	$ 15,000
ORG-R1-02	Township of Augusta	BYC Composting Study (Task 2)	$ 2,700
ORG-R1-03	City of Toronto	Multi-family waste facility	$ 35,000
ORG-R1-04	Region of Peel	BYC sales in schools	$ 10,000
ORG-R1-05	Dufferin County	Impacts of user pay on organics collection	$ 25,000
ORG-R1-06	AMRC	Workshop Proceedings	$ 5,000
ORG-R1-07a	City of Orillia	Compost Markets Development	$ 5,800
ORG-R1-07b	City of Orillia	Compost Packaging	$ 5,000
ORG-R1-08	City of Guelph	Glass grinding technology	$ 6,010
ORG-R1-09	Quinte Waste Solutions	Multi-family organics source separation	$ 13,000
ORG-R1-10	City of Sault Ste. Marie	Waste Management Master Plan	$ 10,000
0RG-R1-11	City of Woodstock	Backyard Composting Study	$ 12,900
0RG-R1-12a	Region of Waterloo	92/93 Backyard Composting Survey Update	$ 4,500
ORG-R1-12b	Region of Waterloo	Compost Markets	$ 6,000
ORG-R1-13	Regional Municipality of Niagara	Co-collection Study	$ 50,000
ORG-R1-14	All Ontario Municipalities	1999 Diversion Cost Survey in co-operation with CAO Benchmarking Initiative/MWIN/AMRC	$ 20,000
		Total Funding ORG Round 1	$ 190,910

Organics - Round 2

ORG-R2-01	AMRC	Policies and Legislative Options to Optimize Residential Organics Diversion	$6,000
ORG-R2-02	AMRC	Organics Processing: Current Capacity and Options	$11,500
ORG-R2-03	Composting Council	Rules and Networks	$52,500
ORG-R2-04	Composting Council	Composting Awareness Week	$30,000
ORG-R2-05	Halton	Solid Waste Management Strategy	$10,000
OPT/ORG-R2 01	Markham / Toronto	Automated Cart-Based Collection System for Organics, Garbage and Recyclables	$60,000
OPT/ORG-R2 02	Markham / Guelph	Baseline Sampling of Material Densities	$4,650
ORG-R2-06	Orillia	Phase Two Expanded Organics Collection	$11,500
ORG-R2-07	Ottawa	Apartment Mixed Waste Processing Pilot (test Conporec's facility)	$22,500
ORG-R2-08	Ottawa	Market Development for L&YW Compost in Field Application for Production of Fruits & Veg.	$7,500
ORG-R2-09	Ottawa	Market Development for L&YW Compost in Greenhouse & Nursery Production	$7,500
ORG-R2-10	Ottawa	Market Development for L&YW Compost on Golf Courses	$7,500
ORG-R2-11	OWMA	Organic Waste Symposium	$2,500
ORG-R2-12	City of Peterborough	Exploration of Options for Organics Collection	$15,000
ORG-R2-13	Quinte Waste	Residential Depot Organics Collection Project	$15,000
ORG-R2-14	Simcoe	Seasonal and Urban-Rural Organic Waste Composition & Survey	$4,020
ORG-R2-15	Sudbury	Construction of L&YW Composting Pads	$75,000
ORG-R2-16	Toronto	Overcoming commercial barriers to development of organic material diversion facilities	$30,000
ORG-R2-17	Victoria	Expanded leaf and yard waste composting program	$10,000
ORG-R2-18	Waterloo	Composting emissions study	$20,000
ORG-R2-19	Seguin Township	Curbside Collection of Kitchen Organics demonstration	$4,200
ORG-R2-20	Amprior	Backyard Composting Useage Survey	$2,600
ORG-R2-21	Region of York	Plastic Film Extraction from a Processed Municipal Organic Residual Stream	$75,000
		Total Funding ORG Round 2	$484,470
		Total Funding ORG Rounds 1 & 2	$675,380

HSW - Round 1

Project #	Municipality/Organization	Project Name	WDO Funding
HSW-R1-02	Centre & South Hastings	Permanent HSW Depot in North Hastings	$ 25,000
HSW-R1-04	County of Peterborough	Two Permanent Seasonal HSW Depots	$ 22,250
HSW-R1-08	North Renfrew	Permanent HSW Depot at New Landfill	$ 7,125
HSW-R1-10	Victoria County	Permanent HSW Depot	$ 25,000
HSW-R1-13	City of Owen Sound	Permanent HSW Depot	$ 37,000
HSW-R1-14	Amalguin Recycling	Two Permanent HSW Satellite Sites at Landfill	$ 50,000
HSW-R1-16	City of London	Alternative Use for Latex Paint	$ 35,000
HSW-R1-25	Niagara Regiona & AMRC	HSW Composition and Characterization	$ 17,500
		Total Funding HSW Round 1	$ 218,875

HSW - Round 2

HSW-R2-01	Region of Niagara and AMRC		$13,000
HSW-R2-02	City of Sault Ste. Marie		$115,625
HSW-R3-03	1999 Diversion Cost Survey in co-operation with CAO Benchmarking Initiative/MWIN/AMRC		$20,000
		Total Funding HSW Round 2	$148,625
		Total Funding HSW RoundS 1 & 2	$ 367,500
		TOTAL FUNDING ALL PROJECTS	$1,517,880

1.1.2 Funding & Regulations Committee

Terms of Reference

An over-arching goal of the WDO is the preparation of recommendations with respect to the design of permanent arrangements to support the development of sustainable waste recycling and diversion programs in Ontario. The primary goals of the Funding and Regulations Committee include:

1. identifying options for a long-term, sustainable funding formula prescribing appropriate levels of annual financial contribution and appropriate sources of that contribution to support diversion programs as set out in the MOU;

2. assessing the need for regulation to support these recommended funding options and to ensure a level playing field within each affected industry sector.

The Funding and Regulations Committee met seven times as of August 9.

Accomplishments:

- ✓ Reviewed Canadian and international experience with product stewardship models.
- ✓ Developed Guiding Principles for the long-term funding formula.
- ✓ Reviewed and approved the 1999 material recovery rates for the province.
- ✓ Reviewed and approved the five-year material recovery rate projections.
- ✓ Reviewed and approved the 1999 baseline of net costs of municipal residential recycling costs.
- ✓ Reviewed and approved the five-year projection of net costs of municipal residential recycling costs.
- ✓ Received and reviewed the WDO consultation inputs.
- ✓ Developed preliminary recommendations for the structure of the proposed WDO municipal financial support for municipal residential materials recycling:
  - •• calculate net costs
  - •• calculate costs by material
  - •• develop the structure of the proposed incentive-based payments to municipalities.
- ✓ Reviewed and approved preliminary cost estimates for:
  - •• organic waste diversion
  - •• HSW management costs.
- ✓ Developed preliminary options for industry and municipal enforcement mechanisms.
- ✓ Developed preferred model for allocation of WDO financial support for municipal recycling programs.
- ✓ Established industry/municipal working group for continued refinement of WDO municipal funding allocation model.
- ✓ Reviewed and approved Combined Guiding Principles for municipal recycling, HSW and organic diversion.
- ✓ Reviewed and approved WDO committee projections for material recovery and associated costs for recycling, organics and HSW programs.
- ✓ Reviewed and modified recommendations from WDO task groups related to long-term funding arrangements for organics diversion and HSW programs.
- ✓ Developed recommendation on allocation of costs between industry and municipalities.
- ✓ Developed recommendations on continuation of WDO programs.

- ✓ Developed recommendations on proposed funding arrangements and regulations for consideration by the WDO Board.
- ✓ Reviewed and approved the recommendations on changes to the RBAC funding program.

Guiding Principles for the Development of Long-Term, Sustainable Funding Mechanisms

In order to guide the work of the WDO, the Funding and Regulations Committee developed the Guiding Principles for a Long-Term, Sustainable Funding Formula for municipal residential recycling programs. The Minister of the Environment received these guiding principles in April. The WDO subsequently revised this document to incorporate consideration of organic waste diversion and HSW management programs and the WDO Board of Directors approved the resulting Combined Guiding Principles document on August 9. A copy of the final document is included as Appendix 3 of this report.

Sharing the Costs of Waste Diversion Programs

In addition to the detailed analysis completed of residential materials recycling programs, the Funding and Regulations Committee reviewed the work of the WDO Programs Committee related to organic waste diversion and HSW management. Based on the recommendations developed by the Funding and Regulations Committee, the WDO Board subsequently approved the recommendations to the Minister regarding the sharing of the net costs for municipal waste diversion programs for an initial five-year period. It is further recommended that these cost allocations, along with the need for continuation of the WDO, be reviewed at that time.

	Industry	Municipalities
Residential Recycling	50%	50%

Qualifier:
subject to the distribution of funds according to the agreed to WDO funding allocation model (see below)

	Industry	Municipalities
HSW Management	50%	50%

Qualifier:
subject to an ongoing review of the designated HSW materials to be included in municipal recovery programs

	Industry	Province/Municipalities
Organic Diversion	50% of paper related costs (which comprise approximately 16% of the targeted organic stream)	Each share 50% of remainder of organic diversion system costs

Qualifier:
applicable where sanitary and other low-grade papers are included in the compost stream. Industry is not expected to contribute to the costs of food and/or yard and garden waste diversion programs. The preliminary assumption is that sanitary and low grade papers (i.e. paper towels) represent approximately

16% of the targeted organic wastes, with industry contributing up to 50% of the costs of managing these specific materials.

WDO Financial Support to Municipalities

The Funding and Regulations Committee developed a broad consensus on how WDO funds would be allocated to support municipal residential recycling programs, subject to the conditions identified below.

The WDO proposes to utilize a funding allocation model to calculate appropriate support payments to Ontario municipalities that takes into consideration key program variables including population density, number and type of materials collected, material mix and composition. A brief summary of the primary steps used to calculate appropriate municipal payments follows:

Step 1 – Calculate Baseline Costs to be Used as the Ontario Reference Program

- calculate of the annual net cost of municipal recycling programs for the province as a whole;
- divide this annual net cost by the total tonnes of recyclables recovered in the province;
- calculate the coverage mix of materials to be used in the 'basket of goods' in the reference community material mix;
- set the costs to collect and process each material, calculated on a material-specific basis (taking into consideration volume, weight and operational issues) which will then be blended into a single per tonne calculation for payment to municipalities;
- input the current market value for each of the recovered materials (based on a survey of actual province-wide market values).

Step 2 –Calculate Individual Municipal Payments

- input the quantities of each material collected and marketed by reporting municipalities (actual individual municipal costs would not be required for the model);
- the financial payments due to individual municipalities calculated by the model would be modified by their population density, the materials included and their relative proportions;
- work is continuing on developing a further modifier, likely to be based on the cost of delivering recovered materials to market;
- 90% of the calculated payment would be distributed directly to municipalities; either as direct payment or in-kind support (see Section 5.6);
- the remaining 10% of the 50% industry share of total costs would be used by the WDO to provide bonuses to reward superior performance and/or to promote increased efficiencies in existing municipal programs through system re-engineering.

Given that further refinements to the model are still required, the WDO Board has accepted in principle the recommendation that this model be further developed in cooperation with the Association of Municipalities of Ontario (AMO), as the basis for distribution of WDO funds in support of municipal recycling programs, subject to:

(a) a trial run of the model using the reported 1999 costs for the majority of municipal recycling programs in the province;
(b) continued refinement and agreement to the population density factors, which will influence the range of per tonne fees paid to municipalities;
(c) for 'year one', the accepted 'efficiency standard' will be equal to 90% of the calculated average cost of all Ontario municipal residential recycling programs included in the WDO program;
(d) reserving 10% of the industry share of funds to be used by the industry stewardship organization to promote and recognize improved cost effectiveness performance in municipal recycling programs and pilot projects; and
(e) *annual review and re-calibration, as required, of the key data used in the model.*

Industry Enforcement Mechanisms

Given the order-of-magnitude cost estimates of what will be required to fund the anticipated WDO support programs, the WDO Board strongly recommends that the Government of Ontario implement adequate enforcement mechanisms to ensure that the actions to be taken and the funds required from industry are secured.

Among the representatives that have participated in the WDO process to date, the following sectors specifically and strongly endorse the need for backdrop regulations to ensure that sufficient funds are raised and to promote a level playing field among competing companies:

- the packaging chain (retailers, brand owners, suppliers)
- HSW product manufacturers and retailers
- non-prescription drug manufacturers
- municipalities
- Recycling Council of Ontario

Representatives of some industry sectors have expressed support for non-regulatory approaches to meet their sector's share of responsibility for achieving the overall provincial goal of 50% waste diversion, including:

- Canadian Newspaper Association
- Ontario Community Newspaper Association
- Rechargeable Battery Recycling Corporation

The Retail Council of Canada, before withdrawing from the WDO process, took the position that the responsibility for financing waste management programs, including waste diversion, should rest solely with municipalities.

Given this range of views, the Funding and Regulations Committee focused its attention on developing an approach to enforcement that would promote a level playing field among industry sectors, while providing flexibility on how these mechanism might be implemented. The preferred approaches developed for each designated waste stream, and approved by the WDO Board, are identified in Section 6 of this report.

Municipal Enforcement Mechanisms

Even assuming the provision of financial and technical support from the WDO, it is projected that additional enforcement mechanisms are likely to be required to ensure that municipalities implement new programs in support of the provincial goal of 50% waste diversion and HSW management.

Following on from the recommendations of the Funding and Regulations Committee, the WDO Board recommends that the Government of Ontario implement mechanisms to ensure that municipalities establish the programs recommended by the WDO in support of the province's waste diversion and HSW management objectives, and to make the costs of these programs visible to their residents.

The key elements of these municipal enforcement mechanisms would include consideration of :

1. extending the minimum waste diversion service requirements to include expanded organic waste diversion and appropriate HSW access and recovery services;

2. enacting regionally-appropriate bans on organic waste disposal in landfill sites;

3. requiring municipalities to calculate the costs of local waste management and waste diversion services and to notify residents of these costs; and

4. requiring those municipalities that achieve less than a 50% waste diversion rate (based upon the base year of 1987) by 2005 to implement incentive schemes (such as bag limits or user fees), or alternatively, to have their WDO financial contribution reduced.

Review of the Existing Provincial 3Rs Regulations

Also following from the work of the Funding and Regulations Committee, the WDO Board further recommends that a task group be established under the auspices of the WDO, with representation from the Ministry of the Environment, municipalities, non-governmental organizations and industry to review the existing provincial 3Rs Regulations.

Key elements of this review to include consideration of:

1. completion of a lifecycle inventory of the environmental costs and benefits of achieving a 50% waste diversion goal on a province-wide basis and secondly, completing a lifecycle inventory in a representative sample of individual municipalities;

2. a review of the minimum number of materials required to be included in municipal recycling programs with consideration given to:

   (a) eliminating materials in some regions (such as glass) where environmental costs may exceed the environmental benefits achieved; and
   (b) expand the minimum number of materials to be included in municipal recycling programs;

3. a review of any requirement to provide for the separate collection of organic wastes in northern municipalities;

4. a review of the minimum population thresholds established for municipal waste diversion programs;

5. mandatory procurement requirements for products manufactured from recovered waste materials; and

6. a review of acceptable economic uses for recovered waste materials.

1.1.3 Communications Committee

Terms of Reference

The Communications Committee is charged with the overall responsibility of ensuring that the activities and progress of the Waste Diversion Organization are communicated in an efficient and effective manner to the various audiences in the province who are interested in waste diversion matters. In addition, its mandate covers five major tasks:

- developing and implementing a strategic communication plan for the WDO that guides the communication activities of the organization, including providing strategic communication direction to the WDO Board, Committees and Task Groups;
- coordinating the WDO stakeholder consultation and outreach programs;
- producing the WDO newsletter, The WDO Link, which constitutes the quarterly communication with major stakeholders;
- developing and implementing a strategic plan to make effective use of the advertising space provided by the Canadian Newspaper Association, and subsequently the Ontario Community Newspaper Association; and
- supporting the Composting Council of Canada in the development of its promotional activities, including Compost Awareness Week.

The Communications Committee comprises 13 members from across Ontario. They are municipal mayors, senior elected officials, municipal professional staff, corporate presidents, senior industry specialists and an environmental advocacy leader. The committee met eight times from January through May.

Accomplishments:

- ✓ Developed WDO web site.
- ✓ Negotiated agreement with Composting Council of Canada to fulfill commitment in Memorandum Of Understanding to provide support for Compost Awareness Week.
- ✓ Developed WDO strategic communication plan.
- ✓ Created a comprehensive e-mail/facsimile distribution network to connect instantly with municipalities throughout Ontario.
- ✓ Contracted with the Recycling Council of Ontario to organize and facilitate phase one and phase two of the stakeholder consultation process.
- ✓ Jointly with 10 industry associations and corporations, developed an outreach program to promote awareness and understanding of the achievements and benefits of recycling in Ontario. This took the form of a direct mail promotion piece and poster distributed to elementary schools across Ontario, an interactive web site called *Celebrate Earth Week*, and an eight-city school tour.
- ✓ Produced and distributed first and second quarter communication, *The WDO Link*.
- ✓ Coordinated and distributed the WDO Guiding Principles document.
- ✓ Developed a strategic communication plan and advertising strategy for the advertising space donated by Ontario members of the Canadian Newspaper Association (CNA).
- ✓ Prepared speeches and presentations for board and committee members.

- ✓ Held two stakeholder consultation meetings: one in the north (Thunder Bay) and one in the south (Toronto).
- ✓ Developed and focus-group tested a series of advertisements to promote overall waste diversion in Ontario; to be used by both the WDO and municipalities in the space contributed by daily newspapers.
- ✓ Developed and distributed a document detailing eligibility criteria for municipalities to use the advertising space contributed by Ontario members of the CNA.
- ✓ Coordinated WDO Interim Report and posted to web site.
- ✓ Developed program of advertising support from Ontario's community newspapers for municipalities.
- ✓ Developed two compost awareness advertisements for distribution to Ontario daily newspapers.
- ✓ Coordinated WDO September 1 Report.
- ✓ Posted WDO September 1 Report to the WDO web site.

Disseminating Information and Outreach

The WDO Link

A key activity of the committee has been to produce and distribute the WDO's newsletter, *The WDO Link.* Published quarterly, The Link provides a detailed documentation of the WDO's progress towards its goals. By mid-July, the committee had distributed two of the four issues it is to publish in 2000. The newsletter is distributed to about 1,200 municipal and industry people in Ontario, as well as those interested in the WDO and community waste management issues. The next issue of The Link will follow on the heels of this September 1 Report and the final issue will be published in December.

Web site and Networks

One of the first tasks the committee tackled was the establishment of a web site, www.wdo.on.ca. The contents of the site are updated continuously with new information and documents. To ensure that information about WDO activities received wide circulation, the committee also established information dissemination links through the Recycling Council of Ontario (RCO) RE-News system (reaching some 1,000 readers) and the Association of Municipalities of Ontario (AMO) which provides a direct connection to municipalities.

To facilitate effective communication with key solid waste management personnel in municipalities and with members of municipal councils, the committee developed a combination email/facsimile distribution system that ensures information, such as the WDO Calls for Proposals, stakeholder consultation process and the Municipal Advertising Criteria Application is instantly delivered into municipal hands.

Communication Materials and Outreach

Through the WDO Secretariat, the committee also provides an essential service to the WDO committees and task groups by preparing and editing a wide range of program and project communication materials, including letters, key milestone documents such as the guiding principles, Interim Report, project descriptions and speeches. Speaking engagements for WDO Board members, committee representatives and secretariat staff have included various industry sector and municipal meetings, such as the Municipal Waste Integration Network, an organization composed of municipal and waste management business representatives and the Association of Municipalities of Ontario. The committee developed the WDO strategic communication plan to ensure that such communication vehicles contained the organization's key messages.

Stakeholder Consultation

Part of the Communications Committee's work has entailed ensuring that interested parties have opportunities to participate in the WDO process and to comment on the key products of its work. Toward that end, the committee initiated and co-ordinated the stakeholder consultation program.

The committee contracted with the Recycling Council of Ontario (RCO) to organize

and facilitate the program. It consisted of two stages:

- the first stage solicited comments on various options in the eligibility criteria that determined how funds would be allocated to municipalities to support residential recycling systems;
- the second stage provided interested parties with the opportunity to comment on the Interim Report after it was delivered to the Minister of the Environment.

The RCO, using the broad range of WDO and AMO distribution systems, as well as its own lists and networks, developed and disseminated information promoting the consultation process. Under the guidance of the WDO Communications Committee, it developed a *Backgrounder and Points for Discussion* paper to stimulate discussion around municipal eligibility criteria.

First, it encouraged written comments and second, it offered interested parties an opportunity to attend one of two stakeholder consultation meetings. The WDO held the first of these forums in Thunder Bay (May 4) in connection with the Northwestern Ontario Municipal Association meeting. The second forum took place in Toronto on May 8.

Based on the input from the two forums and the written submissions, the RCO summarized comments, opinions and suggestions in a report tabled for information at the June 14 WDO Board of Directors' meeting. The WDO, through its Funding and Regulations Committee, used the suggestions contained in the report to develop the long-term funding formula to support residential recycling in Ontario and to establish recommendations for allocating funds to municipalities to support waste diversion programs.

Another component of stakeholder discussion occurred at a meeting with various representatives of environmental non-government organizations in Ontario. Facilitated on behalf of the WDO by the Toronto Environmental Alliance, the meeting took place on June 12 in Toronto and included representatives from the following organizations: Great Lakes United (Hamilton), Citizen's Network on Waste Management, Rural Action, University of Toronto, Toronto Environmental Alliance, Guelph Environment Network, Canadian Environmental Law Association, North Watch, CIELAP, Recycling Council of Ontario.

The environmental groups' comments and suggestions focused on four primary areas:

- incentives must be sufficient to motivate industry to reduce waste through packaging re-design;
- industry must be held accountable if it does not meet the requirements of the funding formula;
- northern municipalities must be treated in a manner that does not penalize them by measuring them against performance benchmarks which they cannot meet because of factors such as sparse populations and distance to markets, and
- regulations must be put in place to ensure a level playing field within the industry sectors involved in this process.

The final phase of consultation occurred as the Interim Report was delivered to the Minister of the Environment on June 30. The WDO invited comments on the report. In all, the WDO distributed for comment more than 500 copies of the report. These were either downloaded from the WDO web site, were sent to WDO committee and task group members or were sent to individuals or organizations on request.

The WDO received 19 separate written submissions offering comments. A summary of the submissions, prepared on behalf of the WDO by the Recycling Council of Ontario, is included as Appendix 5 in this document, along with notations from the WDO concerning how it has addressed the major points. The submissions that were sent as, or could be acquired as electronic copies, are included on the WDO web site.

In keeping with its policy of information circulation, the WDO will post the September 1 Report on the web site and make individual hard copies available on request.

Effective Use of Advertising Space

In close cooperation with the Canadian Newspaper Association (CNA), the Communications Committee developed a plan to allow municipalities to apply to use the advertising space that has been made available by the Ontario daily newspaper members of the CNA. Municipalities have begun to apply for use of the space, using the criteria and application procedures established by the WDO.

The plan provides for about 60% of the 453,000 lines of advertising space to be available for the use of local municipalities. The remaining space is being held in reserve by the WDO for ads that promote overall waste reduction as well as ads that support the Composting Council of Canada (as per the agreement in the Memorandum of Understanding) and the Recycling Council of Ontario's Waste Reduction Week.

It is expected that the bulk of applications will flow to the WDO in the third and fourth quarters. The WDO sent a reminder to municipalities requesting that they indicate, by early September, their intentions to use the space. This will ensure that space is reserved for them. The WDO will utilize all unbooked space to promote waste diversion recycling, composting and HSW activities.

Municipalities may develop ads at their own cost, or they can use a selection of generic waste reduction ads created by the WDO. Tested for effectiveness in focus groups and produced by a professional graphics firm, the ads have been posted on the WDO web site in a section entitled the "WDO AD SHOP." Municipalities can "shop" the ads and choose the ones they wish to use. Additional ads will be posted to the web site in the coming weeks. The WDO ads are included in Appendix 6.

The Communications Committee has set up a tracking and monitoring system to ensure that applications are processed quickly and the space is used effectively and completely.

Community Newspapers Contribute Space

On behalf of the Communications Committee and the Board of Directors, the secretariat initiated discussions with the Ontario Community Newspaper Association to explore the opportunity for this sector of the newspaper industry to make a similar contribution of space to help promote greater waste reduction in Ontario.

Through its organization, the Ontario Community Newspaper Association (OCNA), the industry committed to providing a contribution of advertising space at "no charge" to help municipalities promote waste diversion activities. The space is valued at $300,000 and is to be used in the balance of 2000. The community newspaper industry has also offered to provide web site links to municipal waste management program sites, where these are available. The WDO informed municipalities of the new resource and expects to begin receiving applications for this space early in the third quarter.

Composting Council of Canada

The committee undertook discussions with the Composting Council of Canada (CCC) to establish support for Compost Awareness Week and other CCC objectives, as indicated in the Memorandum of Understanding. The support consists of two components: $30,000 to assist in promoting composting awareness in Ontario and advertising space valued at $100,000 (from the contribution made by the Canadian Newspaper Association). The Council and the WDO collaborated on the creation of two newspaper advertisements, one promoting the benefits of using compost and the other promoting the composting of fall leaves. The WDO will place these ads in provincial dailies beginning in September.

1.2 WDO Second Quarter Financial Report

The following three tables represent: the contribution (pledges) made by industry to support the WDO, the original WDO budget, and the second quarter results and current forecast for 2000.

Table 1.2

Pledges to Support the Waste Diversion Organization

Pledges	CSR $	CPCA $	CMCS $	LCBO $	CNA $	OCNA-$	Total $
30-Jan-00	500,000	50,000	50,000	5,000,000	50,000		5,650,000
31-Mar-00	875,000	37,500	37,500				950,000
30-Jun-00	875,000	37,500	37,500				950,000
30-Sep-00	875,000	37,500	37,500				950,000
01-Nov-00				4,000,000			4,000,000
30-Dec-00	775,000	37,500	37,500				850,000
Total Cash Pledges	**3,900,000**	**200,000**	**200,000**	**9,000,000**	**50,000**		**13,350,000**
Pledges in Kind		50,000	50,000		1,000,000	300,000	1,400,000
Total Pledges	**$3,900,000**	**$250,000**	**$250,000**	**$9,000,000**	**$1,050,000**	**300,000**	**$14,750,000**

CSR - CSR Corporations Supporting Recycling
CPCA - Canadian Paint & Coating Association
CMCS - Canadian Manufacturers of Chemical Specialties Association
LCBO - Liquor Control Board of Ontario
CNA - Canadian Newspaper Association
OCNA - Ontario Community Newspaper Association

Table 1.3

Original WDO Budget Approved by the Board for the Year 2000

	Advertising	LCBO Funding	Optimization	HSW	Organic	Admin	Total
MOU ALLOCATION							
SERVICE & PROJECTS	**$1,000,000**	**$8,000,000**	**$2,000,000**	**$1,000,000**	**$2,000,000**	**$500,000**	**$14,500,000**
LCBO Grants		8,000,000					8,000,000
Administration						460,731	460,731
WDO Process, Executive and Secretariat Services			351,840	175,920	351,841		879,601
Implementation Support		50,000	216,525	108,262	216,525		591,312
Ongoing CSR Demonstration Programs			804,355	101,875	150,000		1,056,230
Projected New Program Expenses			729,670	407,528	1,274,928		2,412,126
CNA Advertising Support	1,050,000						1,050,000
TOTAL SERVICES & PROJECTS	**$1,050,000**	**$8,050,000**	**$2,102,390**	**$793,585**	**$1,993,294**	**$460,731**	**$14,450,000**
Variance to MOU	**$50,000**	**$50,000**	**$102,390**	**($206,415)**	**($6,706)**	**($39,269)**	**($50,000)**

Table 1.4

Waste Diversion Organization Second Quarter Results & Current Forecast for 2000.

	Advertising	LCBO Funding	Optimization	HSW	Organic	Admin	Total	Current Forecast
ANNUAL BUDGET								
SERVICE & PROJECTS	**$1,050,000**	**$8,050,000**	**$2,102,390**	**$793,585**	**$1,993,294**	**$460,731**	**$14,450,000**	**$14,797,754**
	YTD	**YTD**	**YTD**	**YTD**	**YTD**	**YTD**	**YTD**	
LCBO Grants		3,999,996					3,999,996	$8,000,000
Administration						234,360	234,360	$486,031
WDO Process, Executive and Secretariat Services			253,003	113,910	264,113		631,026	$927,055
Implementation Support	105	19,900	137,589	76,973	71,597		306,164	$566,312
Ongoing CSR Demonstration Programs			365,995	34,096	36,900		436,991	$1,087,848
Projected New Program Expenses			5,679		44,073		49,752	$2,380,508
CNA Advertising Support	24,466						24,466	$1,050,000
Ontario Community Newspapers								$300,000
TOTAL SERVICES & PROJECTS	**$24,571**	**$4,019,896**	**$762,266**	**$224,979**	**$416,683**	**$234,360**	**$5,682,755**	**$14,797,754**
YTD Budget	**$38,000**	**$4,030,000**	**$1,133,333**	**$334,299**	**$861,768**	**$226,366**	**$6,623,766**	
Variance	**($13,429)**	**($10,104)**	**($371,067)**	**($109,320)**	**($445,085)**	**$7,994**	**($941,011)**	

As specified in the MOU, the corporation's audited financial statements will be submitted to the Ministry of the Environment after the year-end.

Part II

Requirements of the MOU Still Outstanding

2.0 Key Tasks to be Completed

With the presentation of this report to the Minister of the Environment, the WDO has completed all but a few of the tasks required of it in the MOU. The following describes the tasks which remain to be completed.

2.1 Board of Directors

Tasks to be Completed:

- Meeting with Minister to review report.
- Review and approve the third and fourth quarter newsletter communication, "The WDO Link."
- Review report and make recommendations on proposed governance of a permanent WDO.
- Approve the final report describing 'year one' WDO activities.
- Review and approve the WDO Audited Financial Statements.
- Review and approve the WDO transition plan (if appropriate).
- Receive and approve in principle, the WDO Communications Strategy for 2001.

More detail on the procedures that will be used to complete these are included later in this section.

2.2 Programs Committee

2.2.1 Round Three Project Priorities

The third and final round of funding under the WDO will take place in the fall of 2000. In mid-September, the Programs Committee will finalize its priorities and these are expected to focus on:

- *Implementation Support.* Rounds One and Two emphasized municipal research and demonstration projects with some implementation support. Round Three will focus on support for the full-scale implementation of projects that will lead to cost savings and increased diversion.

- *Market Development.* The diversion scenarios presented in this report are all dependent upon the capacity of recycling and compost markets to absorb the "new" tonnes of secondary materials that will be recovered. Several comments received in response to the WDO Interim Report stressed that more emphasis and resources should be directed to market development, particularly in the area of organic waste.

- *Multi-Family Diversion Systems.* According to an August 2000 RCO report on multi-family recycling in Ontario, the capture rate of recyclables in apartment units, allowing for smaller family size, is not more than one half of that achieved for single-family dwellings. The opportunity clearly exists to increase multi-family recycling significantly, with the potential for per tonne costs to be lower than for single family dwellings. The need to introduce effective methods of organic diversion from multi-family units is also apparent if the provincial waste diversion goal is to be achieved.

The request for municipal proposals will be issued on September 21, 2000 with a deadline for submissions of October 20th.

The total funding available for Round Three is $717,720.

2.2.2 Revisions to Interim Five-Year Plans Pending Results of WDO Funded Projects

As improved data become available from WDO-funded Round One and Two projects, the results will be used to modify the recycling, organic diversion and HSW five-year plans.

In the area of recycling, the results of several WDO-funded projects—such as the CAO Cost Study and the RCO Multi-Family Recycling Survey— already have been of assistance in the preparation of the Interim Recycling Optimization Five-Year Plan. Other key projects underway such as waste audits, material density studies, material recovery facility (MRF) optimization and demonstrations of innovative collection technologies will also provide up-to-date information that can be used to fine tune the WDO five-year plans by year-end.

Data from the WDO-funded organic diversion projects are urgently required for input into the emerging WDO Organics Interim Five-Year Plan. For example, the diversion projections used for the 'Middle Ground' and '50% Diversion' scenarios presented in Section 4, and in more detail in the appendices, are based on the theoretical estimated capture rates of organics from multi-family sources. Trials funded by the WDO will be critical to refining these key assumptions. Additionally, based on an extensive literature search in the area of backyard composting, the task group has downgraded the diversion estimates previously presented in the Municipal 3Rs in Ontario Fact Sheet. The field results achieved through three WDO-funded Round One organics diversion projects will verify or fine tune these 'write-downs.'

All of the task groups recognize the vital role that market development must play in achieving the goals outlined in the five-year plans. Market development studies are underway for a number of materials, including compost, paper fiber, paint and glass to assess the potential for expanding end-uses and to improve revenues received for these materials.

2.3 Communications Committee

Key Tasks to be Completed:

- Develop three more advertisements for use by WDO and municipalities in the daily and community newspaper ad program.
- Ensure ad space is fully utilized by municipalities and/or the WDO
- Prepare and distribute news release on WDO September 1 Report.
- Prepare third quarter communication.
- Prepare and distribute news releases on project funding support to municipalities.
- Prepare fourth quarter communication.
- Assuming the continuation of the WDO, communications will present a draft plan for communications and education support for 2001 at the October 11 Board of Directors meeting.

2.4 Audited WDO Financial Statements

As specified in the MOU, the WDO is required to produce audited financial statements at the end of the first year of activities. Accordingly, the Board of Directors appointed BDO Dunwoody Chartered Accountants as the auditors for the corporation. The WDO's fiscal year-end is December 31, 2000. The WDO expects to receive the completed audited financial statements for approval by the board no later than February 15, 2001.

The MOU states in Part III section 19 that:

> *"The Corporation shall prepare a report describing its activities carried out pursuant to this MOU and the effectiveness of such activities. The report shall include a section on the implementation of the LCBO funding program. The report shall be submitted to the Minister and the Minister shall make the report available to the public. This report shall deal with the first twelve months of activities of the Corporation or such longer period, not to exceed 14 months, ending at the end of the Corporation's fiscal year. The report shall be submitted within 30 days of the end of the period it deals with.*

Section 20 of the MOU states that:

> *"The Corporation shall engage the services of a qualified auditor to conduct an audit of the books and records of the Corporation in accordance with accepted accounting standards and practices and to prepare a report of the audit. The report shall be submitted to the Minister and the Minister shall make the report available to the public. This report shall deal with the first twelve months of activities of the Corporation or such longer period, not to exceed 14 months, ending at the end of the Corporation's fiscal year. The report shall be submitted within 30 days of the end of the period which it deals with.*

Section 21 of the MOU then gives the option to combine these two reports into a single report.

Based on the time that will be required to prepare audited financial statements and other documentation necessary for the year-end activity report, this report, including the audited financial statements, will be submitted to the Minister no later than February 28, 2001.

2.5 WDO Year-End Activity Report

In addition to the recommendations submitted in this report, the WDO is required to submit a report to the Minister:

- describing its first 12 months of activities carried out pursuant to the MOU and the effectiveness of such activities; and
- an audit report of the books and records of the corporation.

Furthermore, it is the intent of the WDO to report on the results received from the various studies, pilots and implementation work funded by the WDO in its initial year and to use this information to revise, as required, the implementation plans developed for recycling, HSW and organic waste diversion.

All of this information will be combined into a single year-end activity report that is expected to be submitted to the Minister no later than the end of February 2000.

Part III

Recommendations With Respect to Longer-Term Arrangements for the WDO

3.0 Recommendations With Respect to the Design of Longer-Term Arrangements for the WDO

3.1 Continuation of the WDO

The November 1999 Memorandum of Understanding (MOU) created the WDO to implement the programs outlined in the document. The stated purpose was:

> *"The MOU describes a voluntary arrangement in which the LCBO and associations representing companies responsible for products and packaging which is recycled or diverted through Blue Box and other recycling and diversion programs will demonstrate product stewardship by providing funding for programs and activities. This is a temporary arrangement, intended to last approximately one year until replaced by more permanent arrangements. Among the tasks for the initial year is the preparation of recommendations with respect to the design of these longer term arrangements."*
>
> *"It is the intention of the Minister of the Environment to work towards the establishment of a formal structure for the future governance and administration respecting the continuation of the programs described in this MOU. It is desirable that this structure be designed and operated so as to provide a level playing field within each affected industry sector."*

It is our assessment that the work completed by the WDO to date, including:

- the exceptional contributions made through the multi-stakeholder committees;
- the ambitious and extensive range of projects that have been funded and will be completed by municipalities throughout the province, and
- the in-depth, professional support provided through the secretariat

has proven the need for and value of a permanent WDO organization. This is especially so given the extraordinarily limited time frame set by the MOU. The WDO Board of Directors recommends that the Minister of the Environment make arrangements for the continuation of the WDO beyond the one-year voluntary agreement to provide support to Ontario municipalities to achieve the provincial target of 50% diversion of waste from disposal.

It is equally clear, however, that the longer-term goals and objectives set for the WDO and the waste diversion goals set for the province itself cannot be met unless the Government of Ontario is prepared to implement the various enforcement mechanisms identified in Section 6. As exceptional as this effort has been to date, the financial and waste reduction targets set out in this report cannot be achieved through voluntary action alone.

If the Government of Ontario is not willing to become a partner in this process through implementation of the level playing field mechanisms required, the WDO will cease its activities upon submission of its year-end report.

This section also outlines recommendations related to the continuation of the specific programs and activities set out in the original MOU.

The future governance and administration of these programs is also a critical issue, but one that the WDO has not yet had time to address. How the WDO intends to tackle this issue is also detailed below.

3.2 Programs Addressed in the MOU That Should Continue

3.2.1 Recommendations Related to Municipal Recycling

Part IV of the MOU states that the role of the WDO with respect to municipal recycling programs is:

> *"To expend up to $2 million towards the development and implementation of a program to improve the effectiveness and efficiency of Blue Box and other municipal recycling and waste diversion programs", in particular:*
>
> - *Rationalization of MRFs*
> - *Planning for MRF capital improvements*
> - *Optimization of collection rates*
> - *Investigation of innovative collection techniques*
> - *Improve multi-family diversion*
> - *Standardize accounting*
> - *Optimize transport to markets*
> - *Market development*

As part of an integrated strategy to expand diversion programs, the WDO Recycling Optimization Task Group tackled the development of a strategy to divert an additional 200,000 to 335,000 tonnes of recyclables over and above the calculated 1999 materials diversion rate.

The Interim Recycling Optimization Five-Year Plan for achieving this goal is presented in Appendix 4.

The task group's work concluded that the estimated contribution from materials recycling that would be required to meet the province-wide '50% diversion' scenario is achievable with the support of the significant regulatory and behavioral changes as described in the five-year plan.

The task group also identified numerous areas of research that are required to further refine the preliminary estimates presented in the five-year plan and to address key issues which could not be fully answered at this time. Some of the key questions that will require ongoing research and should be part of the work plan of any future WDO include the following points.

Optimizing the Provincial Network of Material Recovery Facilities. More than 60 material recovery facilities (MRFs) that process dry recyclable materials exist in the province. The 10 largest facilities process more than half of the material in the province. The remaining facilities are mid to smaller size. Some facilities operate only on a part-time basis only as sufficient material is collected for processing.

Two fundamental questions over the next five years are:

- is new MRF capacity required to process the projected additional tonnage that will be collected in the future, and
- how can the processing network be optimized?

One of the major WDO projects currently underway is the MRF Optimization Study that will address these and related questions. It is expected that the results of this work and the implementation of the recommendations to follow will be a critical issue for the WDO.

Multi-family Recycling. A critical challenge in terms of the future growth of the recycling system in the province is increasing recovery from the multi-family (MF) sector. Since almost 30% of households in the province are multi-family, two specific issues are:

- how to improve the performance of existing MF recycling programs, and
- how to add new programs in a way that is both cost effective and high performing?

Existing buildings can be retro-fitted to accommodate recycling (i.e. chute systems for recyclables), but usually only with high capital costs. Some municipalities require new high-rise buildings to provide the opportunity to recycle in a form that is as convenient as the disposal system. Adding the MF sector to the provincial recycling system in a way that is cost effective and high performing is the next stage of evolution in the province's residential material recycling system.

Market Development All of the recycling scenarios developed by the WDO assume the recovery of materials not yet collected widely in the province. Two of these key materials are mixed residential fibers (e.g. boxboard and corrugated boxes) and mixed household plastics (e.g. HDPE). Mixed fibers are especially important given the significant quantities remaining in the waste stream that these materials represent (old newspaper, by contrast, has little room for new growth given that capture rates—at least from single family households—are already reasonably high). Traditionally, markets for mixed residential fibers have gone "soft " as the economy slows. Since mixed fibers will be such an important part of new growth in recycling, stabilizing markets for this material will be especially important in the future.

The other anticipated growth area is that of mixed plastics. As plastics continue to replace more traditional materials (such as glass and steel) in the packaging stream, the overall weight of packaging declines, but some of these materials are more expensive to recover through municipal recycling programs. The WDO is working with the plastics industry in Ontario to prepare a market development strategy for plastics.

Continued (and stable) growth in the value of the "basket of goods" collected in recycling programs is fundamental to reducing total system costs.

Integrating Recyclables, Organics and Special Waste Diversion. Integrating the three waste streams (recyclables, organics and HSW) into a diversion strategy is another core challenge for the Ontario waste diversion system. The municipal recycling collection infrastructure is well established and can be further extended. A key issue, however, will be to link the three growth areas especially the new and improved organics collection systems. Ontario has been an innovator in the development of co-collection systems (i.e. the collection of recyclables with organics and/or with regular household garbage). It is anticipated that the next stage of system growth will need to continue to experiment with and adopt cost-effective approaches to integrated diversion systems including, where appropriate, the inclusion of packaging and materials now considered part of the HSW programs.

3.2.2 Recommendations Related to WDO-Recyclable Beverage Alcohol Containers Program

As specified in the MOU, the WDO took on responsibility for disbursement of funds contributed by the LCBO to offset the costs of managing recyclable beverage alcohol containers (RBAC).

Funds attributable to 1999 costs were distributed to Ontario municipalities in February, 2000. The WDO is planning to distribute funds to defray the year 2000 costs of recycling RBAC containers in November, 2000. The survey of 1999 glass tonnage on which the distribution will be based was completed in July.

The MOU specified that the RBAC funds be distributed among municipalities on the basis of a set of criteria and a specified application form and formula described in the appendices of the document. The WDO has followed this direction in distributing the 1999 and 2000 disbursements.

Looking forward to disbursements to be made in future years, beginning with 2001, the WDO has reviewed the existing criteria, formula and data submission process and recommends the changes summarized in Table 3.1

Table 3.1

Recommended Changes to RBAC Funding Program

1999 RBAC Program Issue Identified	1999/2000 RBAC Action Taken	Recommended Change to 2001 RBAC
Industrial, Commercial and Institutional (IC&I) -glass collected from private establishments often included in residential tonnes reported. Formula pays on all tonnes reported.	-The WDO modified the **2000 RBAC survey** specifically requesting that municipality's breakout IC&I glass collected in 1999. WDO continued to pay on all tonnes reported.	-The **2001 RBAC Program** should distribute funds on the basis of residential glass tonnes reported. IC&I tonnes reported should not be funded.
Data Reporting and performance 1. Accuracy of data 2. Timely reporting 3. Survey format	1. Verification (using kg/hh/yr test) 2. 2000 RBAC deadline communicated to municipalities 3. Identified survey format changes necessary for 2001 RBAC	1. Options to verify Data –full system audit –random system audit –self-reporting with certificate 2. Tighten timelines for reporting 3. Promote standardized municipal record keeping.
Market Issues The formula described in the MOU requires that the WDO disburse funds on the basis of tonnes collected even if those tonnes are disposed of for economic reasons.	The WDO followed the MOU and paid municipalities based on glass collected for the purpose of recycling.	The 2001 RBAC program should pay on glass actually marketed for the purpose of the manufacture of new glass containers or other beneficial uses.
Program Issues 1. Wet/Dry Programs have higher than average glass residue and difficulty in isolating streams. 2. Sort-line residue.	1. Glass tonnage for wet-dry estimated based on kg/hh/yr recovery of similar program. 2. Identified survey format changes necessary for **2001 RBAC.**	1. Use actual tonnes based on the market issues above recommendation. 2. Promote standardized municipal record keeping.

3.2.3 Recommendations Related to Organic Waste Diversion

Part IV of the MOU states the role of the WDO with respect to organic waste diversion to be:

"To expend up to $2 million towards the advancement of organic waste diversion, in particular:

- *$50,000 in support of educational programs encouraging organic waste diversion, including support for International Composting Awareness Week; and*
- *up to $1,950,000 for the development and implementation of a program to assist municipalities with 50% of the cost of developing and establishing organic waste diversion systems, such as centralized composting facilities and organic digestion facilities. Eligible capital costs shall include planning, design, engineering and construction and equipment costs for such facilities."*

The Organics Task Group of the WDO's Programs Committee developed a strategy to divert an additional 700,000 to 1,000,000 tonnes of organic waste from residential sources, in order to reach the 50% goal stated in the MOU. The task group also provided input to the Funding and Regulations Committee on the funding options and regulatory requirements needed to support these programs.

The plan developed by the task group to divert significant amounts of residential organic waste is presented in Appendix 4 of this document, along with a summary of discussions regarding a sustainable funding formula, and regulatory options which would be required to meet this goal.

The task group concluded that to reach a 50% diversion target, the following systems would need to be implemented:

- a comprehensive curbside[1] residential organic waste diversion program[2] to service all urban single-family households in Ontario[3], and
- processing the waste from about half of the multi-family households in the province through mixed waste processing plants.

The task group does not consider a five-year time frame sufficient to achieve this level of organic diversion for a number of reasons including the timing of existing waste management contracts, the time required for siting facilities, approval and construction of new processing facilities, the lack of experience with this type of technology in this market, etc. This strategy would also need to be underpinned by new regulatory and financial support mechanisms.

A scenario that diverts about 845,000 tonnes of organics per year (compared to current levels of 385,000 tonnes) is considered aggressive, but achievable within the five-year timeframe, so long as the appropriate legislative and financial supports (outlined in Section 6.2) are put in place.

The task group identified numerous areas of research that are still required to refine the preliminary estimates presented in the five-year plan, and to address issues which could not be fully assessed in the time available to the WDO. Some of the key questions which will require ongoing research, and should form the workplan of any future WDO program will include the following points.

Processing Infrastructure Development There is not sufficient processing capacity in place in the Province of Ontario at this time to process the amount of organic waste that would be recovered through the various strategies considered. One of the challenges to any strategy will be to develop the processing infrastructure (both aerobic composting and anaerobic digestion) through construction of appropriate processing capacity throughout the province.

Technical Barriers To Compost Processing A number of technical barriers to enhanced organics diversion, including issues such as the removal of plastic from finished compost, and the sourcing of effective bag breaking equipment to remove plastic from incoming organics streams need to be resolved to improve the quality of finished compost and therefore secure market outlets and increase revenues.

Collection Challenges Cost effective and efficient collection of residential organics is one of the keys to the successful implementation of programs throughout the province. Each community needs to identify the system that meets its own needs, while learning from the experience gained in other communities. The

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1 Curbside collection is the approach that has demonstrated the high recovery levels per household required to recover the tonnage necessary to reach the 50% target.

2 to include household food waste, as well as leaf and yard waste

3 in communities of 5,000 population or greater

WDO should continue to support pilot collection programs as the first step in comprehensive system implementation. Ongoing research should continue to identify cost efficient and publicly acceptable ways of collecting residential organic materials for diversion.

Behavioural Change From the public perspective, successful, sustained diversion of organics is a more complex task than diversion of dry recyclables. The material involved is wet, and can become odorous if not handled properly. Many communities have found significant resistance to the behaviour change required to source separate organics, and properly set them out at the curb. Ongoing research is necessary to identify the mechanisms needed to get people to change their behaviour and participate fully in the organics collection system, and to isolate actions that can be taken at the system-design stage to facilitate the change in behaviour required.

Policies Required to Enhance Diversion of Organics The WDO has concluded that a number of policies are required to ensure participation in the organics system to the level needed to achieve significant diversion levels. The task group considered policies such as landfill bans, bag limits, user pay and regulated mandatory service levels in preparation of this report. Ongoing research is required to examine the impacts of each of these policies on the amount of organics diverted.

Multi-Family Organics The WDO recognizes the difficulty of source-separating organic materials from multi-family waste, particularly in older buildings where space is not available and the waste management system is not designed to handle source separated streams. For this reason, the plan has been developed assuming that mixed waste processing is the only viable approach to diverting organic waste from multi-family buildings. Cost estimates carried out to develop the five-year plan indicate that this is a very high cost approach to diverting organic waste. The WDO has funded research to test source separation of multi-family waste and also to assess the technical and economic viability of mixed waste processing of multi-family waste to recover organics. However, a number of questions remain unanswered at this time. Significant additional research is required to identify ways to address organic waste from multi-family households.

Backyard Composting Ongoing research is required to identify the appropriate role of backyard composting in a comprehensive organics diversion strategy, including reasonable estimates of the actual costs of running backyard composting programs, the diversion results which realistically can be achieved by backyard composting in the long term, appropriate supports required to sustain backyard composting programs in the long term (levels of promotion and education, and technical support, etc.), and the impacts of various policies (bag limits, user fees, etc.) on the costs of backyard composting and on the levels of diversion achieved.

Compost Markets If a comprehensive organics diversion strategy is rolled out in the Province of Ontario, significant additional amounts of finished compost will be available in a competitive marketplace. It is essential to secure adequate markets for this material to sustain the composting industry and therefore the long-term financial viability of any organics strategy. Issues which will need to be addressed on an ongoing basis will include market development strategies through approaches such as government procurement practices, research into alternative uses and markets for finished compost, development of compost product quality standards, etc.

Residential Organics System Costs The cost estimates developed in the five-year plan presented in Appendix 4 are based on very preliminary estimates obtained from a number of sources. Significant additional research is required to refine these estimates by collecting more comprehensive data on existing and planned organics programs, and identifying the best available cost projections for future organics programs.

Net Environmental Impacts of Organic Waste Diversion. An integrated approach to identifying the optimal waste management system, community-by-community, is required to make the best decisions on how organic and other elements of the waste stream are managed in Ontario. This should form one of the ongoing tasks of the WDO.

3.2.4 Recommendations Related to HSW Management

Part IV (C) of the MOU states that:

> *" The Corporation shall spend up to $1,000,000 for the development and implementation of a program to support the establishment of from five to ten new permanent or satellite municipal Special Household Waste depots. The Corporation shall establish priorities where such facilities are most needed. Funding shall be based on funding 50% of capital costs and 50% of operating costs for a one year period, not including funding for the processing of the waste."*

Part IV (D) states:

> *"In addition to the program described in Part IV (C), appropriate design of a special household waste management program, in which residents may take special household waste to an appropriate depot where the products would be accepted into a program funded by the retailer or manufacturer or as otherwise developed/funded by industry."*

The Household Special Waste (HSW) Task Group was charged with:

- evaluating the need for and supporting implementation of new HSW depots;
- developing a long-term (five-year) plan for managing HSW;
- evaluating the need for a separate industry developed/funded program; and
- developing recommendations for sharing costs related to these programs.

From the work of the HSW Task Group, the WDO makes the following recommendations:

- There is a need for enhanced coverage of HSW depots, at least on an interim basis.

The HSW Interim Five-Year Plan (Appendix 4) includes maps of current HSW collection sites in the province, which illustrate that significant geographic areas (though with relatively small population base) do not have ready access to a HSW depot or service. Furthermore, it is not yet clear that the depots established in existing locations are adequate to meet the needs of the majority of the population in these areas. While it is projected that the proposed WDO program with greater industry efforts in product reformulation and consumers' proper usage and disposal of some materials now recovered at HSW depots will reduce the need for collection in future, the WDO should continue to support further development of the province-wide system. The level of service and access to these programs needs to be determined to project the number of new HSW programs and depots that would be required.

- WDO support should focus on the establishment of HSW services feeding into larger, permanent regional facilities, already established in major urban centres.

These services may range from special event days to more permanent satellite collection sites feeding into regional HSW collection centres. This will require the WDO to assess the regional needs and cost

implications of the existing system in 'year one' with identification of the most cost effective systems for implementation.

- While the WDO has accepted the recommendation of the task group that the costs of municipal HSW recovery programs should be shared during the first full year of such a program, the participants need to reach agreement on incentives specific to HSW management and these should be incorporated into the financial support program.

Some key examples that have been considered by the task group include:

- modifying the current approach of sharing reported municipal costs to base future sharing on the basis of jointly approved efficiency standards;
- setting appropriate standards for distance and access to HSW facilities;
- establishing incentives for increased diversion on non-hazardous materials from HSW facilities to reduce total costs to all;
- establishing incentives for stabilization and recycling (where appropriate) of recovered materials;
- creating programs to measure the effectiveness of efforts to promote re-formulation, proper use at home, and re-use where appropriate; and
- investigating options for recovering energy from recovered materials.

- Continuously review the products that are included in HSW management programs.

The list of products included in 'year one' of the proposed HSW Interim Five-Year Plan represents an interim list jointly agreed to by the industry and municipal representatives on the HSW Task Group. All parties agree that this list requires continuous review with the objective of establishing guidelines based on clear, jointly accepted scientific criteria. Such criteria are expected to be developed over the next several years by the Canadian Standards Association (CSA). Upon completion and approval of this work, it is proposed that the WDO adopt common criteria and product lists and also support their adoption in other provinces.

- Develop model request for proposal, tender and contractual documents specific to HSW management.

Greater standardization of these tools would improve the accuracy of HSW reporting and program bench marking, which will in turn help to identify the most cost effective approaches to managing HSW.

- Develop standardized accounting and data collection systems.

In concert with the continuous review process, the WDO can extend its work on standardized accounting for diversion of other waste materials to incorporate the specific needs of HSW programs.

- Undertake a cost/benefit analysis of municipal HSW programs.

It is recommended that the WDO sponsor a cost/benefit analysis, incorporating environmental protection and cost considerations, to be completed within the five-year period agreed to for the proposed WDO HSW funding program.

- Monitor HSW disposal costs with increasing waste management industry consolidation.

Both industry and municipal representatives have expressed concern that continuing consolidation within the waste management industry may lead to reduced competition and higher prices for HSW disposal

services in future years. It is recommended that the WDO monitor and evaluate these costs, compared to those incurred in other jurisdictions.

3.2.5 Recommendations Related to Communications

The Memorandum of Understanding governing the WDO's creation and mandate calls for communications activities, in particular:

Part III # 18.

> *"The Corporation shall communicate information respecting its programs to all Ontario municipalities at least quarterly."*

If the WDO evolves from a one-year voluntary arrangement into a permanent organization with an initial five-year mandate, communications functions will remain a core activity for both municipal program communication and education needs and the province-wide communication needs of the WDO itself. Key among these activities will be the developmental and administrative work required to support, in an effective and efficient manner, the advertising space expected to be contributed by the Ontario daily newspaper members of the Canadian Newspaper Association (CNA) and the members of the Ontario Community Newspaper Association (OCNA).

All of the activities managed by communications should be governed by a strategic communication plan that would be developed annually, corresponding with the establishment of the WDO's overall and program goals.

Administering Advertising Space Contribution. Ensuring the full utilization of the advertising space expected to be made available by Ontario's daily and weekly newspapers will remain a central function of the WDO's communications responsibilities. Since this advertising space will likely be available to hundreds of municipalities throughout Ontario, a coordinated approach to its use and monitoring is necessary. Only by coordinating the resource through a central location will the WDO and the CNA/OCNA be able to monitor its use and ensure that the advertising placed focuses on WDO and CNA/OCNA approved messages.

Program Communication & Education. It can be anticipated that specific Communication and Education (C&E) support for the WDO's programs activities will be a major function of the organization. This will entail broad-brush C&E activities such as developing a store of promotional materials that municipalities can access to enhance their own resources, as well as direct C&E support in the way of technical assistance. The target audience in this instance would be the citizens of Ontario, either collectively or in individual communities, depending on the type of project.

Technical assistance would comprise both public opinion and attitude research and C&E strategic planning and implementation experience and expertise.

The WDO recommends that public opinion and attitude research should become a WDO core function on two levels. First, research on public attitudes and behaviours pertaining to various waste management issues and activities should be carried out periodically to establish benchmark data and to track changes that result from program activities. Second, it should be employed on a project-by-project basis, as needed, whenever significant pilot and demonstration projects are implemented. This ongoing flow of information will provide an essential monitoring of changes in the public pulse on waste issues.

On a similar level, it is recommended that the WDO should continue to provide, where appropriate, technical C&E assistance to municipalities on the strategic planning and implementation of C&E activities directed at changing and maintaining new public behaviours.

It can be expected that these activities will employ both mass media and community-based social marketing tools.

It is recommended that, under a strategic communication plan, best practices and communication tools developed by one municipality (i.e. advertisements paid for or supplemented by WDO dollars) would be made available broadly to other municipalities throughout Ontario.

In this context, the WDO would encourage and assist municipalities with the development of annual and project strategic communication plans, resulting in the transfer of these skills to municipalities without benefit of professional communication expertise.

The transfer of knowledge, skills and tools, along with the WDO's umbrella C&E activities targeted at developing awareness and behavioural change among the citizens of Ontario should help the WDO achieve target waste diversion goals.

WDO Communications WDO communications would encompass both province-wide information and waste diversion promotion activities as well as communication support for WDO-funded municipal projects. Some of the information dissemination activities would include preparing and distributing key documents describing progress and ideas, posting information to the WDO web site, producing targeted information updates that would be distributed through email and fax, news releases, speaking engagements and interviews/articles for trade media.

3.3 Governance of the WDO

Given the level of effort required to implement the programs and activities of the WDO over the last eight months, the Board of Directors has not had the opportunity to address this critical issue. Therefore, the board has directed the WDO Secretariat to prepare a report, following consultation with key stakeholders, on the proposed future governance structure of the WDO, for review by the WDO Board at its meeting on October 11, 2000. This will also provide an opportunity for the board to take into consideration comments received in response to this report.

The key issues to be addressed within this report are to include:

1. the future roles and responsibilities of the WDO, including proposed procedures for reviewing and approving proposed industry stewardship plans and programs;

2. a review of anticipated WDO administrative and technical resource requirements and recommendations on how these should be provided;

3. a preliminary business plan for 2001 (subject to the response received from the Minister of the Environment to the recommendations made by the WDO);

4. details of proposed methodologies for calculating WDO payments to municipalities for approved WDO programs;

5. details of proposed methodologies for calculating industry payments to support the WDO's program activities;

6. recommendations on industry sector fees for 2001 and preliminary forecasts of the fee rates for the initial five-year period;

7. the recommended composition of the Board of Directors of the WDO and appointment procedures;

8. decision-making procedures for the board and the administrative arm of the WDO;

9. procedures for other key stakeholders to have input to the activities of the WDO; and

10. reporting requirements of the WDO.

Following the WDO Board's review and approval, this report will be forwarded to the Minister of the Environment.

Part IV

Recommendations with Respect To Waste Diversion Objectives

4.0 WDO Waste Diversion Objectives

The parties to the MOU that provided the basis for the creation of the WDO "confirmed their continued commitment to reduction, reuse and recycling toward Ontario's goal of 50% waste diversion from disposal."

The letter the Minister of the Environment sent to the WDO in response to the Interim Report reiterated that "the province remains committed to achieving 50 percent reduction in waste disposed per capita relative to 1987."

In this section of the report, the WDO addresses the central issue of how much waste is expected to be diverted through those activities directly supported by the WDO.

4.1 Measuring Waste Diversion

On March 10, 1989, Jim Bradley, then Ontario Minister of the Environment, established a goal of 50% reduction from disposal by the year 2000. At that time, the precise details of how this goal would be measured were not specified. The methodology for measuring progress was first described in more detail in "Measuring Progress Towards Ontario's Waste Reduction Targets" released in June, 1992. In this document, the reduction calculation apparently took into consideration the contribution made through the sum of reduction, reuse, recycling and composting within both the residential and the industrial, commercial and institutional (IC&I) sectors, against the quantities of these wastes generated on a per capita basis in Ontario in 1987.

It is important to emphasize that the waste reduction goal applies:

(a) to the province as a whole and not to each individual municipality, and
(b) to the total of residential and IC&I wastes.

The WDO's current focus is limited to the residential waste stream.

In 1996, the ministry determined that the total quantity of waste reduction from disposal had reached 32% relative to the 1987 baseline. By 1997, this overall level of reduction from disposal had risen to 35%, and by 1998 to 39% (see Table 4.1).

Table 4.1

Ontario Provincial Measurement 1996 – 1998 Trend
Waste Reduction from Disposal (Historical Method)

	1996	1997	1998
Residential % Reduction in Tonnes Disposed	11.5%	25%	31%
IC&I % Reduction in Tonnes Disposed	48%	42%	42%
All Sectors % Reduction in Tonnes Disposed	32%	35%	39%

The reduction from disposal figures for 1996 and 1997 are as reported by the Ontario Ministry of the Environment. The 1996 data was in reference to the April 1998 Recycling Council of Ontario Roles and Responsibilities Report. The WDO estimated the figures for 1998 based on actual 1998 diversion reported by municipalities through the Municipal 3Rs in Ontario Fact Sheet and with WDO estimates for 1998 waste disposal. The WDO also assumed no change to the 1997 IC&I reduction rate for 1998.

However, as can be seen in this table prepared by the WDO, this overall reduction (or "historical") calculation represents a weighted average of reduction in wastes from both the residential and IC&I sectors. Generally speaking, the IC&I sector has been more successful in achieving higher rates of reduction from disposal than the residential sector given that:

- the IC&I waste profile is more homogeneous, facilitating materials recovery;
- management of IC&I wastes is charged on a user pay basis providing an economic incentive to reduce disposal costs; and
- there are fewer individual IC&I generators than residential generators, each with higher concentrations of waste, making recovery more cost effective.

The higher reduction rates in the amount of waste going to disposal achieved in the IC&I sector (48% in 1996), when combined with the residential diversion rates, have tended to 'pull up' the much lower performance of the residential sector. The net result is that the apparent provincial average is disproportionately influenced by the reduction contribution made by the IC&I sector.

The ministry also measures the reduction from disposal in the residential sector on a province-wide basis. The reduction baseline established for 1987 for the province as a whole was 392 kg/per capita/per year. Individual municipalities, however, may use their own local data sources in calculating the progress they have made against their own locally estimated 1987 baseline. This differential, combined with the generally weak data that underpinned the provincial 1987 estimates, can result in significantly different estimates of residential reduction from disposal in any given year. Accurate measurement of reduction from disposal is further complicated by such factors as:

- changes in the municipal waste management services provided (i.e. whether servicing high-rise buildings is contracted out);
- amalgamations of municipal governments;
- changes in economic conditions locally and province-wide;
- changes in the housing mix; and
- discrepancies in the reporting periods or waste data used.

Given these difficulties in calculating local reduction from disposal against an historic baseline, many municipalities also (or exclusively) use a measurement system that evaluates the amount of waste diverted through recycling, composting and HSW against the total waste disposed of in the current year. Table 4.2 compares the key features of the historic method (reduction from disposal relative to fixed baseline) and the current flow (current diversion relative to total current generation).

The two methods are not at odds but can work together to give a multi-dimensional perspective on progress towards a 50% goal. For example, a municipality can calculate its current flow diversion for a particular year and use the disposal figure from this calculation as an input for the historic method calculation.

Table 4.2

Diversion Rate Methodology Comparisons		
Questions	Current Flow	Historical
Captures reduction/backyard composting/user fee impacts?	Estimates	YES
Measures capture efficiency annually?	YES	YES
Independent of population/ growth?	YES	YES
Factors in packaging light-weighting influence on diversion?	NO	YES
Requires strong historical data?	NO	YES
Allows 'apples to apples' comparison of municipal system performance	YES	NO
Impact of economic expansion/ contraction	Minimal	Large
Formula (x 100)	$\frac{\text{1999 waste diverted}}{\text{1999 waste diverted + disposed}}$	$\frac{\text{1987 per capita disposal}}{\text{1999 per capita disposal}}$

Generally speaking, the diversion rate for the historic method will be higher than that for the current method given the same raw data. This is because the historic method captures waste generation trends (such as packaging light weighting and less in-home food preparation) that are beyond the municipality's direct influence and measurement. These factors, however, are included in the calculation of the Current Flow Method. For example, in 1998, using the same raw data, Ontario-wide reduction rates can be calculated as follows:

Table 4.3

Calculation Methods

	Residential 'Current Flow' Diversion	Residential Reduction from Disposal 'Historic Method'	All Sectors Reduction from Disposal 'Historic Method'
1999 Ontario Wide	27%	31%	39%

All of the data collected by the WDO and all diversion calculations and projection scenarios have been based on the Current Flow Methodology. As noted above, the outputs of these calculations can in turn be used by a municipality or by the province to estimate progress towards the historic diversion target.

It is recommended that the WDO continue to measure annual diversion progress using the current method as the basis for reporting on its activities. As an aid to the calculation of current flow diversion, several municipalities in Ontario (Guelph, Peel, Ottawa-Carleton) as well as major centers across Canada (Halifax, Edmonton, Winnipeg) are testing a standardized methodology referred to as the GAP (Generally Accepted Principals for calculating municipal waste flow) methodology. The standardized waste system diagram and conventions utilized in this methodology were developed over the last year by a team of more than 20 waste management practitioners from across Canada. Subject to final revisions by this team, the GAP current flow methodology should be adopted as the standard for all residential tonnage data collected by the WDO. It is also recommended that the data collection activities of the Municipal 3Rs in Ontario Fact Sheet be expanded to include the collection of disposal data consistent with the GAP methodology.

4.2 What Will it Take to Get to 50% Diversion?

Table 4.4 "Getting to 50% Waste Diversion," shows the current status of residential waste diversion in Ontario, based on data collected via the joint Municipal 3Rs in Ontario Fact Sheet, which includes the RBAC survey completed in July 2000. It shows that using the current flow method, recycling, composting and special waste programs diverted 27%, or 1.2 million tonnes of residential waste generated in Ontario in 1999. It should be noted that the overall diversion rate fell by 2% relative to figures reported in the WDO Interim Report for 1998 despite a 2% increase in tonnes recycled through curbside programs. This is due to a decision to reduce backyard compost diversion estimates by more than 72,000 tonnes for the province as a result of further analysis completed by the Organics Task Group.

Having established the current baseline for 1999 at 27%, each task group looked ahead to 2005 to determine the levels of diversion that would be necessary to achieve the 50% residential diversion target measured on a "current flow" basis.

After allowing for 1% annual population growth, and 2% annual new housing starts, the WDO determined that about 1.1 million *new* tonnes of diversion would be required to achieve a 50% target. The question then became, where could the WDO best find the new tonnes of diversion that would be required to close the gap between existing diversion levels and the target.

Looking first at recycling and applying diversion estimates based on the best performing programs in the province, it quickly became clear that materials recycling alone could not achieve the 50% goal. In fact, even if all households recycled 100% of the recyclable materials they generated, the 50% goal would not be met.

Table 4.4

Getting to 50% Waste Diversion

	Current Flow Diversion 1999			50% Diversion 2005		
Population	11,500.00			12,340,000		
Households	4,387,000			4,832,000		
Waste Generation	Tonnes	Kg/cap	Kg/hh/yr	Tonnes	Kg/cap	Kg/hh/yr
Total Residential	4,340,000	377.4	990	4,652,000	377.0	962
Source Reduction & At- Home Organic Diversion	112,000	9.8		190,000	15.4	
Curbside Recycling	667,000	58.0		1,000,000	81.0	
Centralized Organic Composting	281,000	24.4		975,000	79.0	
HSW	6,000	0.5		10,000	0.8	
Bulky Recyclables	100,000	8.7		151,000	12.3	
Total Diverted	1,166,000	101.4	27%	2,326,000	188.5	50%
Total Disposed	3,174,000	276.0	73%	2,326,000	188.5	50%

Current flow diversion calculates the quantity of material diverted from that generated in a given year. The residential reduction from disposal against the 1987 base year rate (historical) would be higher than the current flow. For example, in 1987, the current rate is 27% and the historical rate is 29.5%.

By applying aggressive estimates for future recycling capture rates, doubling of household special waste diversion, and showing aggressive reduction resulting from increased user fees and bag limits, there remained a shortfall of almost 700,000 tonnes relative to the 1.1 million tonnes necessary to achieve 50% diversion. By default, this fell to the organics stream.

Considerable debate continues as to whether the 50% target is the "right" number. It could be argued that 49% or 51% are just as meaningful. Several comments on the WDO Interim Report also pointed out that diversion and system cost are not the only measures of success and that the net environmental impact of future programs should be an additional dimension for consideration. Several lifecycle tools have been developed, including one in Canada that provide quantitative measurement of key environmental parameters of municipal waste management systems, and can predict the potential impact of proposed future systems. The challenge will be to determine the optimal level of diversion from the perspective of disposal reduction, cost, and social and environmental impacts, both locally and collectively, as we look forward.

The WDO's analysis to date suggests that attaining 50% diversion in the timeframe described would require fundamental technical, social and policy shifts as well as a financial commitment akin to a 'step change' in behaviour to move to a next generation diversion system. The elements of such a change would have to include consideration of:

- modification of the Ontario 3Rs Regulations requiring municipalities to divert an expanded organics stream;
- regionally-appropriate disposal bans on organic material;
- expansion of 'bag limit' and 'user fee' programs to all municipalities;
- higher landfill tipping fees to recognize the true market value of disposal;

- extensive public education and ultimately public acceptance of a doubling of current diversion efforts including the 'yuk' factor associated with kitchen organic diversion (this refers to the rapid decomposition of organic materials);
- fast tracking site approvals and permits for the design and construction of the new facilities required to process the 700,000 new tonnes of organic material that would enter the system;
- immediate identification of, and agreement to an equitable cost-sharing formula for the organics stream among industry, municipalities and the province to provide an economic base for the immediate capital expansion program that would be necessary. Establishing a 50% system in the suggested five-year timeframe also would require the cancellation or renegotiation of a large number of municipal contracts with private haulers, likely resulting in additional cost;
- redesign of products and packaging to reduce waste and to facilitate diversion; and
- changing production processes to increase utilization of recovered materials.

Given these challenges and, in particular, the lack of an equitable cost-sharing agreement for the organic sector, the barriers to achieving 50% current diversion in the timeframe given are immense. Section 5 examines the cost of getting to 50% diversion, as well as alternate scenarios including a recommended blended middle ground option.

4.3 Alternative Diversion Scenarios

In 1999, nearly 4.4 million households in Ontario set out approximately 667,000 tonnes of residential recyclables for collection. The majority of this material—about 90%— came from single-family households, while the remaining 10% was recovered from multi-family dwellings. The household recovery rate (a blend of single and multi-family units) in 1999 averaged 165 kilograms per household per year (kg/hh/yr). In addition, backyard composting, bulky recycling and centralized composting together diverted nearly an additional 500,000 tonnes. In aggregate, these diversion activities represent a 1999 baseline residential diversion rate of 27% for the province.

Using the 1999 base rate as a starting point, the WDO originally developed a scenario that calculated the extra diversion required to get to 50% current flow diversion in a five-year period. As a result of the challenges detailed in Section 4.2, the WDO developed two additional scenarios to estimate a range of possible diversion options for residential waste management systems over the next five years.

50% Diversion

As stated in Section 4.2, the 50% Diversion option looks at what it would take to get to 50% residential current flow diversion, in which annual residential diversion would nearly double over 1999 rates. To achieve the target, Ontario municipalities would have to adopt a wide range of new incentives (such as bag limits, reward programs, user pay programs, changes to the 3Rs Regulations and landfill bans), as well as significant changes to the waste management infrastructure—particularly for multi-family units and organic diversion systems—underpinning the high household recovery rates forecast in this scenario.

Middle Ground

This second option assumes aggressive growth in annual recycling tonnage resulting in a projected diversion rate in 2005 of about 40%. An intensive municipal approach to diversion resulting in increased average recovery rates for recycling and full service organic collection for all single

family homes in southern Ontario and all Toronto multi-family homes is a key assumption of this option.

Current Momentum

The third option projects year 2005 diversion at about 30% based on current momentum. A limited number of communities would implement aggressive recycling and organic mechanisms while one-half of the multi-family units in the Greater Toronto Area would achieve high recovery rates through mixed waste processing systems.

The projected five-year diversion scenarios are summarized in Table 4.5

Table 4.5
Projected Five-Year Diversion Options

Scenario	Key Assumptions	Projected Annual Cost in 2005	Policy Implications
Current Momentum	Recycling capture improves to 60% province-wide. Full organic programs for 700k homes @ 60% capture and 25% of Toronto apartments.	Recycling 787,000 Organic 503,000 HSW 7,000 Total = 1,297,000 = 31% diversion	Maintain existing 3Rs Regulation. Continue voluntary industry support for recycling.
Middle Ground	Recycling capture improves to 70% in key urban areas, 60% rest of province. Full organic program for all southern Ontario single family @ 60% capture and 75% of all Toronto apartments.	Recycling 880,000 Organic 845,000 HSW 10,000 Total = 1,735,000 = 41% diversion	User fees/bag limits on waste in key communities. WDO technical & financial support program required. Expand 3Rs Regulation to include organics.
50% Diversion of Municipal Waste Generated	Recycling capture improves to 80% province-wide. Full organic program for all southern Ontario, single-family homes @ 85% capture and half of all multi-family households in the province.	Recycling 1,000,000 Organic 1,168,000 HSW 10,000 Total = 2,178,000 =50% diversion	WDO technical & financial support program required. User fees/bag limits on waste in all municipalities to drive diversion. Banning of organics material at landfill. Higher landfill tipping fees for residential waste.

Part V

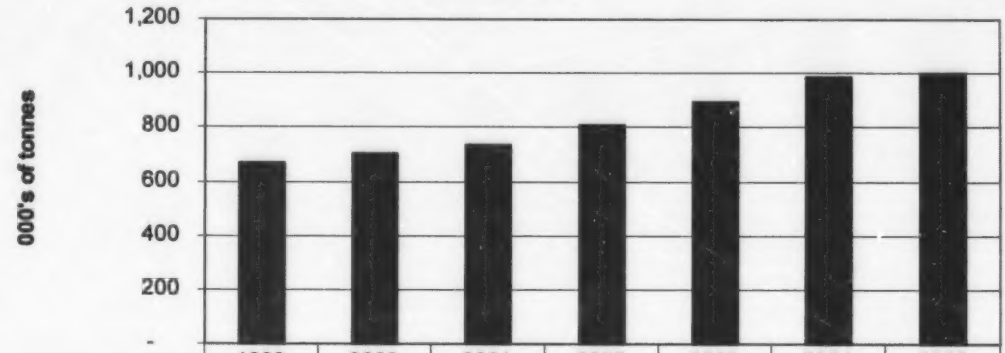
Projected Costs Of Achieving These Targets

5.0 Projected Costs of Achieving These Objectives

5.1 Projected Costs of Achieving the Recycling Objectives

Assuming a 50% diversion target for the year 2005, the contribution made by residential recyclables was estimated to be 1.0 million tonnes, as shown in Figure 5.1. The achievement of this target would represent a 50% increase, or 333,000 new tonnes of recyclables, compared to the recovery of 667,000 tonnes in 1999.

Figure 5.1
Projected Diversion of Recyclables
(000's of tonnes)



	1999	2000	2001	2002	2003	2004	2005
Diversion of Recyclables	667	702	738	810	898	986	1,000

In order to reach the 1.0 million tonne target, significant increases in both the scope of existing residential services and average recovery rates would be required. The number of multi-family (MF) units served would need to increase 24% to 1.1 million, which is 90% of the projected year 2005 MF household stock. Given that private contractors service a significant percentage of MF dwellings, measures likely would need to be implemented to ensure the provision of recycling services to these households.

The number of single family (SF) households with access to recycling services is not expected to increase significantly, though average household recovery rates would need to rise sharply. Estimates indicate that a 50% increase in the current average SF household recovery rate (i.e. from 208 to 304 kg/hh/yr) would be required to meet the diversion target. In addition, the average recovery rate for multi-family dwellings would need to increase from the existing level of 78 kg/hh/yr to as much as 167 kg/hh/yr. It was also assumed that higher recovery rates could be achieved with the implementation of mixed waste processing facilities to service Toronto's 450,000 MF households.

Two key sets of cost factors determine the estimated cost of recycling: the gross cost of the service (i.e. including collection and processing) and the revenues from the sale of materials (commonly called the "basket of goods" in curbside programs). One of the important accomplishments through the WDO process has been to undertake the necessary research to determine more accurately the current cost of recycling in the province.

Future costs of recycling will depend on the gross cost of collection and processing as well as the value of the "basket of goods" revenue. Since 1997, the basket of goods revenue has remained constant and shows a slight upward trend. Combined with stable gross collection and processing costs, the net cost of recycling is expected to decline slowly over the next five years.

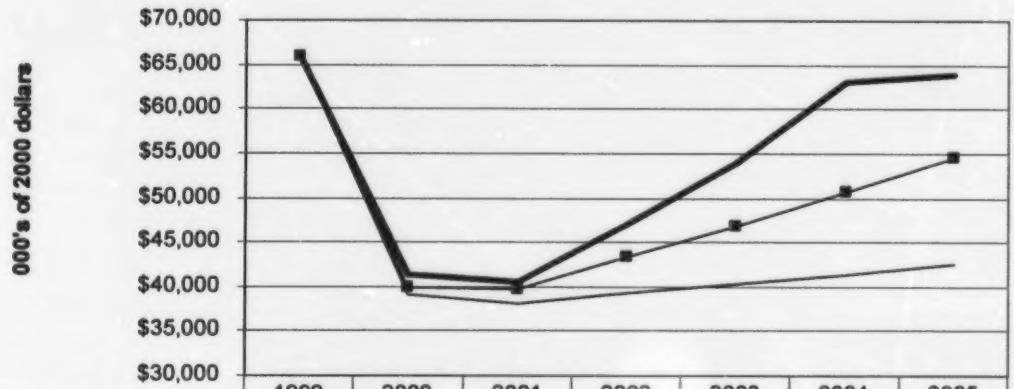
With recovery projected at 1.0 million tonnes (i.e. the 50% Diversion scenario), expenditures in 2005 are estimated to rise to $64.0 million. For the Current Momentum scenario, the net cost of recycling in 2005 is projected to be $42.5 million (i.e. due to slightly higher revenue streams and projected lower collection processing costs). The Middle Ground scenario represents a mid-cost range, decreasing from $66 million in 1999 to $54.6 million in 2005.

Currently, the province-wide average cost of collecting, transferring and disposing of curbside garbage is estimated to be between $80 and $100/tonne. The cost for multi-family dwellings is in the range of $60 to $80/tonne. Assuming a 2% inflation per annum, the Year 2005 cost range of garbage disposal is estimated to be $110/tonne and $90/tonne for curbside and multi-family respectively.

Based on these figures and the assumptions noted earlier, the Year 2005 cost of recycling curbside and multi-family recyclables is expected to be less than the cost of treating this residential material as garbage.

The costs of achieving the alternative diversion scenarios identified in Section 4.3 are presented in Figure 5.2 below.

Figure 5.2
Projected Recycling Costs for Three Scenarios:1999-2005



	1999	2000	2001	2002	2003	2004	2005
50% Diversion	$66,000	$41,400	$40,500	$47,000	$53,900	$63,100	$64,000
Middle Ground	$66,000	$40,000	$39,800	$43,300	$46,900	$50,700	$54,600
Current Momentum	$66,000	$39,200	$38,200	$39,300	$40,300	$41,400	$42,500

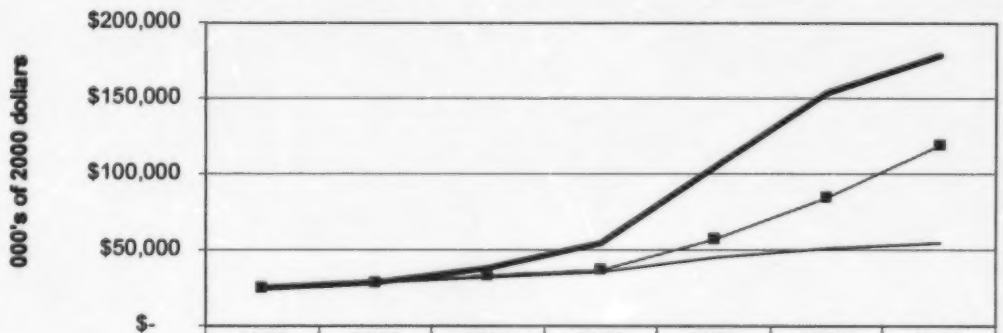
5.2 Projected Costs of Achieving the Organics Objectives

Ontario households diverted an estimated 393,000 tonnes of organic waste in 1999. Values for the year 2000 may be somewhat higher, given that wet summer weather likely has produced significantly more leaf and yard waste. This projected total includes 281,000 tonnes diverted through leaf and yard waste programs (reported in the recent datacall carried out by the WDO, in partnership with a number of organizations including CSR: Corporations Supporting Recycling, the Ministry of the Environment and the Recycling Council of Ontario), and an estimated 112,000 tonnes diverted through backyard composters. The cost of the existing organics management system is estimated at $25 million/year, based on a survey of Ontario municipalities carried out by WDO researchers in June 2000.

The Current Momentum scenario projects an increase in residential organic waste collection in Ontario of 20,000 tonnes/year, by adding 630,000 single family households to comprehensive curbside organics programs over a five-year period. This would increase the overall costs of the existing organics system to an estimated $55 million/year, from the current level of $25 million per year, or an increment of $30 million per year over current levels. The other scenarios discussed are compared to this Current Momentum scenario.

Ontario households would need to divert an estimated 1.17 million tonnes of organic waste to achieve a 50% overall diversion target. This is about 780,000 tonnes/year more than the current diversion levels. Recovery of an additional 780,000 tonnes/year would require all urban single-family households in Ontario (including urban households in northern Ontario, but excluding rural Ontario households), and half of the multi-family households in the province (primarily in the greater Toronto Area and one or two other large urban areas) to have comprehensive organics recovery systems. This would require the rollout of a comprehensive organics program to 2.5 million single-family households and 600,000 multi-family households in Ontario over the next five years.

Figure 5.3
Projected Organics Diversion Costs for Three Scenarios: 1999-2005



	1999	2000	2001	2002	2003	2004	2005
50% Diversion	$25,000	$28,000	$38,000	$55,000	$105,000	$153,000	$179,000
Middle Ground	$25,000	$28,000	$33,000	$37,000	$57,000	$84,000	$119,000
Current Momentum	$25,000	$28,000	$32,000	$36,000	$45,000	$51,000	$55,000

The effort and fundamental waste management system changes required to recover an additional 780,000 tonnes of organic waste (to reach a 50% target) is not considered to be a realistic goal within a five-year timeframe (to 2005) for a number of reasons. The timing of current contracts already in place in the province makes it very difficult to change existing systems within this timeframe. These changes likely cannot be implemented until current contracts expire and new contracts can be negotiated. The time required to site composting facilities designed to handle residential food waste and also to obtain a Certificate of Approval (particularly given the current approval system) is considered a second major barrier to rapid implementation of a new system to manage residential organics. Time is also a factor in properly structuring and awarding the new contracts required to address residential organics

The task group considered diversion of an additional 460,000 tonnes above existing levels as a more realistic, but still very aggressive goal within a five-year timeframe. This target would still require significant new activity within the next five years, including the rollout of a comprehensive curbside organics collection service to two million single-family households and to process mixed waste from 275,000 multi-family households in Ontario. Preliminary estimates indicate that the processing of large quantities of multi-family waste to recover the organic component is less cost efficient than focusing on single family homes. As a result, a strategy that does not address multi-family waste could also be considered. The results of some WDO research projects are required to firm up this conclusion.

The capital costs to achieve the 50% diversion goal for organics are estimated at $560 million, with ongoing annual operating costs of $179 million/year for the organics system (including amortized capital). Because large amounts of waste would be diverted away from the garbage stream, savings would be realized in this system. The net increase in costs to the overall waste management system (organics plus garbage) is estimated at $59 million/year more than the Current Momentum scenario, or $89 million/year more than the status quo.

The Middle Ground scenario, which involves aggressive growth, but is considered a more realistic goal within the next five years, has capital costs estimated at $350 million, and ongoing annual operating costs for the organics system estimated at $119 million/year (including amortized capital). Again, savings will occur in the garbage system as a result of moving 460,000 tonnes/year into the new organics system. An estimated $20 million of this total is related to the mixed waste processing of 175,000 tonnes of multi-family waste, to recover 73,000 tonnes of organic waste. This is an increment of $5 million more than handling the multi-family waste as garbage. An additional $90 million/year is related to collecting and processing residential organic waste from two million homes in a comprehensive three-stream system. The remaining $9 million is the estimated cost of diverting organic waste from the remaining households through leaf and yard waste collection and backyard composting, which is a very cost effective approach, but does not recover sufficient organic materials to reach high diversion goals and targets. The net increase in the costs of this scenario is estimated at $29 million/year more than the Current Momentum scenario, or $59 million/year more than the existing system.

Backyard composting will continue to have a role in both scenarios, with 600,000 to 1,000,000 households in the province continuing to depend on backyard composting and leaf and yard waste collection for organic waste diversion. There is a limit to the recovery backyard composting can achieve, however, as only about 30% of single family households have demonstrated a sustained interest in taking part in this activity.

5.3 Projected Costs of Achieving the HSW Objectives

Municipal HSW Program

The Memorandum of Understanding which has guided the work of the WDO through this start-up period, requires "the identification of options for a long-term sustainable funding formula prescribing appropriate levels of annual contribution and appropriate sources of contribution for long-term continuation of funding for,

(i) Up to 50 per cent of the net operating costs of municipal Blue Box programs and other municipal programs that recycle the same or similar materials, and

(ii) Future continuation of the programs set out in Part IV "C" of this MOU and for other programs with purposes similar to those described in this MOU"

Industry and municipal members of the task group achieved consensus on a HSW system to collect a broad list of HSW defined materials determined by scientific criteria and/or the agreement that a special collection need existed. The task group also discussed the addition of an expanded list of materials through the current HSW system provided that the materials met one or more of the criteria for inclusion and the affected industry sector provided funding.

Table 5.1

Ontario HSW System – Cost/Tonnage Estimates

	Total Tonnes Collected Ontario	GTA Urban Centres @ $920/tonne A	Large Urban Centres @ $1,600 tonne B	Other Municipal Centres @ $2,160 tonne C	Range of System Costs Low Range = A+C High Range = B+C
Estimated 1999 Recovery	6,100 tonnes (21% recovery)	$4 M	$7 M	$4 M	$8 to $11 M
10% Annual Growth Rate to 2005	9,800 tonnes (33% recovery)	$6 M	$11 M	$6 M	$13 to $17 M

Notes: M = millions

Key Assumptions:

1. HSW generation is 0.71% of total residential waste = 30,000 tonnes.
2. Generation rate assumed to be constant through 2005.
3. GTA municipalities account for 70% of total quantities recovered with the remaining 30% from other communities.
4. Capital costs not included.

The cost of municipal HSW management systems was first estimated by examining the quantity of HSW generated in 1998 and 1999 through waste composition analyses and data calls to municipalities. It was estimated that in 1999, HSW programs collected 6,100 to 6,300 tonnes of HSW materials at a cost of $8 million to $10 million. (Note, however, that the recent WDO HSW Cost Survey indicated that capital costs were not reported in six of the 50 municipalities reporting costs.)

Recovery projections for 2005 were made based on the assumption that the quantities of HSW materials recovered and the associated costs would increase at a rate of 10% per year (with no modifiers for efficiency gains and not including central costs related to communication and education programs and continuing work required on the definition of HSW materials to be collected). It is estimated that by 2005, the Ontario HSW System will collect around 9,800 tonnes of materials (an estimated 33% recovery rate of HSW generated) at a cost ranging from $13 million to $17 million per year. Table 5.1 illustrates the assumptions and cost scenarios used.

Industry Self-Managed HSW Programs

In addition to the program described in Part IV "C", paragraph 2 of the MOU, Part IV (d) refers to the appropriate design of special household waste management programs in which residents may take special household waste to an appropriate depot where products would be accepted into a program funded by the retailer or manufacturer or as otherwise developed/funded by industry.

The HSW Task Group considered this task to be redundant given industry willingness to share the costs of maintaining the established system of municipal HSW programs in Ontario. In addition, industry representatives took the view that such programs developed/funded solely by industry were not in keeping with the guiding principles established by the WDO.

The cost of establishing new industry controlled collection systems with the precautions and technology to meet fire codes and existing HSW depot standards was considered high and did not support an integrated approach to managing special household waste through existing municipal special waste systems.

WDO support for a municipally-managed HSW system does not, however, prevent specific industry sectors from initiating and funding their own separate HSW collection systems if this is their preference. The task group fully supported this as long as the performance criteria set for these programs remained the same for all industry stewardship organizations.

The task group did not estimate the potential recovery estimates or costs that might be associated with such programs. Examples of voluntary industry self-managed programs do exist, however, such as the Rechargeable Battery Recycling Corporation, which reports having recycled 26 tonnes of batteries Canada-wide. Other programs exist on a local basis, such as a paint-recycling program through participating retailers in the Region of Ottawa-Carleton and automotive oil recovery at some retailers and service centers.

5.4 Five-Year Projected System-Wide Diversion Estimates & Costs

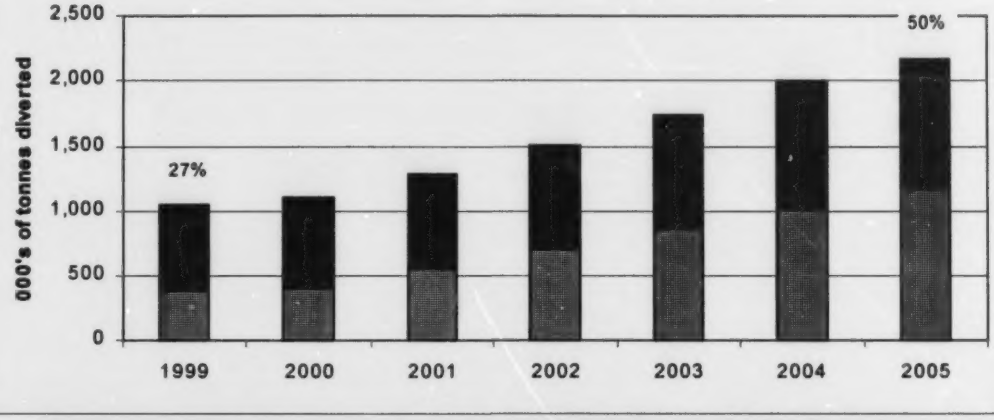
In Sections 5.1 through 5.3, the WDO estimated the diversion costs for recycling and organics using a series of three common scenarios: Current Momentum, Middle Ground and 50% Diversion. Achieving the 50% overall diversion goal is dependent on each of the streams (primarily organics and recycling) contributing the quantities specified in their respective 50% diversion five-year plan scenarios. If either primary stream is unable to meet its stream specific target, and if the shortfall cannot be made up

elsewhere, the overall goal cannot be achieved.

The combined diversion necessary to achieve 50% and the associated costs are shown in Figure 5.4, "50% Diversion Scenario Five-Year System-Wide Cost Projections." The projected annual net operating cost of this system is $260 million or approximately $112 per tonne.

Figure 5.4

50% Diversion Scenario Five year System Wide Cost Projections



System Cost $millions

HSW	$10.0	$10.0	$11.0	$12.5	$14.0	$15.5	$17.0
Organics	$25.0	$27.8	$38.1	$54.7	$1[illegible]	$152.[illegible]	$179.4
Recycling	$66.0	$41.4	$40.5	$47.0	$53.9	$63.1	$64.0
Total	$101.0	$79.2	$89.6	$114.2	$172.9	$231.3	$260.4

The projected decline in recycling costs in 2000 are based largely on current prices paid for recovered printed materials. Actual costs in this and future years are subject to a wide range of variables including the quantities recovered, material mix and prevailing market prices.

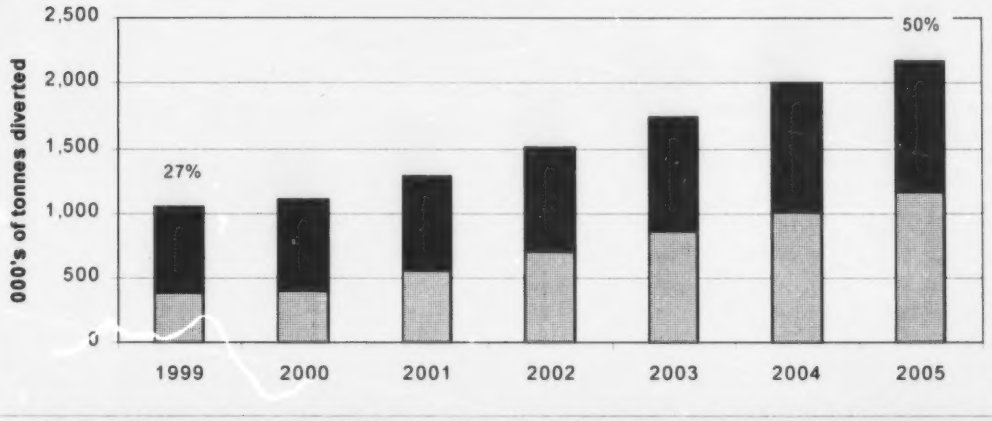
Currently, the cost of collecting, transferring and disposing of curbside garbage is estimated to be between $80 and $100/tonne[4]. This is composed of waste curbside collection and transfer costs of between $40 and $50 per tonne and disposal costs averaging $40 to $50 per tonne. Due to higher collection density, garbage collection costs for multi-family dwellings are lower, averaging $20 to $30 per tonne, resulting in combined collection and disposal costs for multi-family in the range of $60 to $80 per tonne in 1999. These costs are expected to rise to $110/tonne and $90/tonne for curbside and multi-family respectively by 2005. Given

[4] Regarding waste collection and disposal costs:
The curbside collection of waste is estimated to be between $40 and $50 per tonne. This estimate is derived from an extensive survey of waste system costs undertaken by CSR in 1997 and refined with key stakeholder interviews by the WDO Secretariat in summer 2000. Curbside waste collection costs were almost exclusively captured in the $35 to $60/tonne range, with the heaviest weighting of municipalities in the $40 to $50 area. These represent costs reported by municipalities for both publicly and privately contracted collection systems. It is not clear if all capital and administrative costs have been included in reported figures. Similarly, waste collection costs for multi-family dwellings were collected in 1997 and updated in summer 2000. Reported multi-family collection costs generally fell in the $16 to $32 range with the majority between $20 and $30 per tonne. Though not common to all municipalities, waste transfer, where applicable, adds $10 to $15 to waste system costs. Waste disposal costs (landfill, energy from waste and waste export) were also thoroughly surveyed in 1997 and updated in June 2000. Disposal costs in the 13 major regions and cities of Ontario generally range from $30 to $60 per tonne but are as high as $150 per tonne in one region. Costs in rural and northern regions are generally lower. Average costs fell in the $40 to $50 range. Municipalities, particularly in the Greater Toronto Area expect rising costs for disposal in the next five years. The WDO conservatively estimates disposal in 2005 to be between $50 and $60 per tonne.

elsewhere, the overall goal cannot be achieved.

The combined diversion necessary to achieve 50% and the associated costs are shown in Figure 5.4, "50% Diversion Scenario Five-Year System-Wide Cost Projections." The projected annual net operating cost of this system is $260 million or approximately $112 per tonne.

Figure 5.4
50% Diversion Scenario Five year System Wide Cost Projections



System Cost $millions

HSW	$10.0	$10.0	$11.0	$12.5	$14.0	$15.5	$17.0
Organics	$25.0	$27.8	$38.1	$54.7	$105	$152.7	$179.4
Recycling	**$66.0**	**$41.4**	**$40.5**	**$47.0**	**$53.9**	**$63.1**	**$64.0**
Total	$101.0	$79.2	$89.6	$114.2	$172.9	$231.3	$260.4

The projected decline in recycling costs in 2000 are based largely on current prices paid for recovered printed materials. Actual costs in this and future years are subject to a wide range of variables including the quantities recovered, material mix and prevailing market prices.

Currently, the cost of collecting, transferring and disposing of curbside garbage is estimated to be between $80 and $100/tonne[4]. This is composed of waste curbside collection and transfer costs of between $40 and $50 per tonne and disposal costs averaging $40 to $50 per tonne. Due to higher collection density, garbage collection costs for multi-family dwellings are lower, averaging $20 to $30 per tonne, resulting in combined collection and disposal costs for multi-family in the range of $60 to $80 per tonne in 1999. These costs are expected to rise to $110/tonne and $90/tonne for curbside and multi-family respectively by 2005. Given

[4] Regarding waste collection and disposal costs:
The curbside collection of waste is estimated to be between $40 and $50 per tonne. This estimate is derived from an extensive survey of waste system costs undertaken by CSR in 1997 and refined with key stakeholder interviews by the WDO Secretariat in summer 2000. Curbside waste collection costs were almost exclusively captured in the $35 to $60/tonne range, with the heaviest weighting of municipalities in the $40 to $50 area. These represent costs reported by municipalities for both publicly and privately contracted collection systems. It is not clear if all capital and administrative costs have been included in reported figures. Similarly, waste collection costs for multi-family dwellings were collected in 1997 and updated in summer 2000. Reported multi-family collection costs generally fell in the $16 to $32 range with the majority between $20 and $30 per tonne. Though not common to all municipalities, waste transfer, where applicable, adds $10 to $15 to waste system costs. Waste disposal costs (landfill, energy from waste and waste export) were also thoroughly surveyed in 1997 and updated in June 2000. Disposal costs in the 13 major regions and cities of Ontario generally range from $30 to $60 per tonne but are as high as $150 per tonne in one region. Costs in rural and northern regions are generally lower. Average costs fell in the $40 to $50 range. Municipalities, particularly in the Greater Toronto Area expect rising costs for disposal in the next five years. The WDO conservatively estimates disposal in 2005 to be between $50 and $60 per tonne.

these costs to manage waste, municipalities would be faced with higher overall system costs under a 50% overall scenario than the alternative of managing the material as waste.

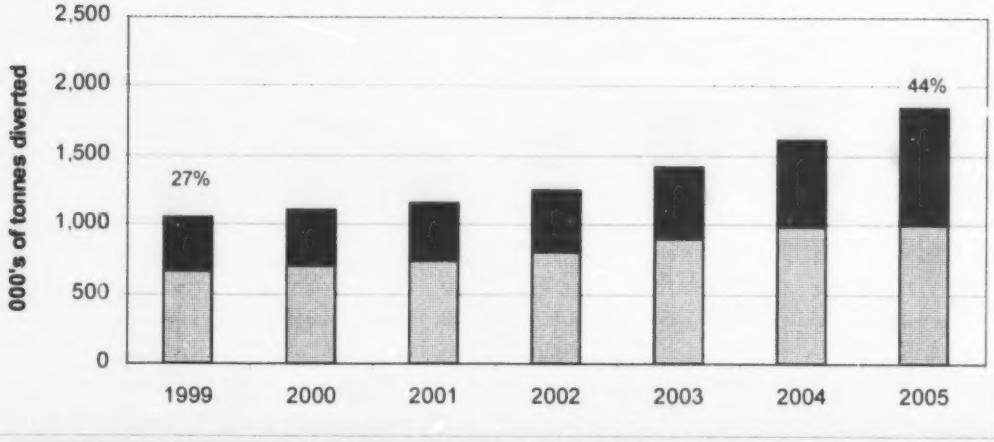
Based on the five-year plans developed by the WDO, the following key conclusions were reached:

> ***Regarding the recycling stream: based on the infrastructure already in place, the identified financial support from industry and assuming the availability of markets to absorb new materials, the 50% Diversion scenario for recycling is aggressive but achievable.***
>
> ***Regarding HSW: although the tonnages are relatively small, and the goal of the committee is ultimately to reduce the generation of HSW, the 50% Diversion scenario for HSW is achievable.***
>
> ***Regarding organics: it is the consensus of the WDO that the 50% Diversion scenario for organics is not achievable within a five-year timeframe and without the immediate development of an equitable cost sharing agreement. The middle ground scenario is considered achievable for the organics stream.***

The incremental difference between the 50% Diversion and Middle Ground scenarios for organics represents a shortfall of 284,000 tonnes. The WDO considered challenging the recycling stream to pick up all or a portion of the difference so that the 50% target could be met. However, as this would mean having to recover virtually 100% of the recyclables in every household in Ontario, and the 50% Diversion scenario for recycling is already thought to be a significant stretch, no additional recycling diversion is likely to be achieved within the five-year period.

Given these conclusions, a hybrid scenario has been developed which combines the 50% recycling scenario and the Middle Ground organic scenario to create a recommended WDO strategy that stretches the current flow residential diversion rate by 2005 to 44%. The cost of this scenario is shown in Figure 5.5.

Figure 5.5
Cost Projections for WDO Recommended Diversion Programs



System Cost $millions

HSW	$10.0	$10.0	$11.0	$12.5	$14.0	$15.5	$17.0
Organics	$25.0	$27.8	$32.6	$36.9	$57.4	$83.7	$118.5
Recycling	$66.0	$41.4	$40.5	$47.0	$53.9	$63.1	$64.0
Total	$101.0	$79.2	$84.1	$96.4	$125.3	$162.3	$199.5

The projected decline in recycling costs in 2000 are based largely on current prices paid for recovered printed materials. Actual costs in this and future years are subject to a wide range of variables including the quantities recovered, material mix and prevailing market prices.

these costs to manage waste, municipalities would be faced with higher overall system costs under a 50% overall scenario than the alternative of managing the material as waste.

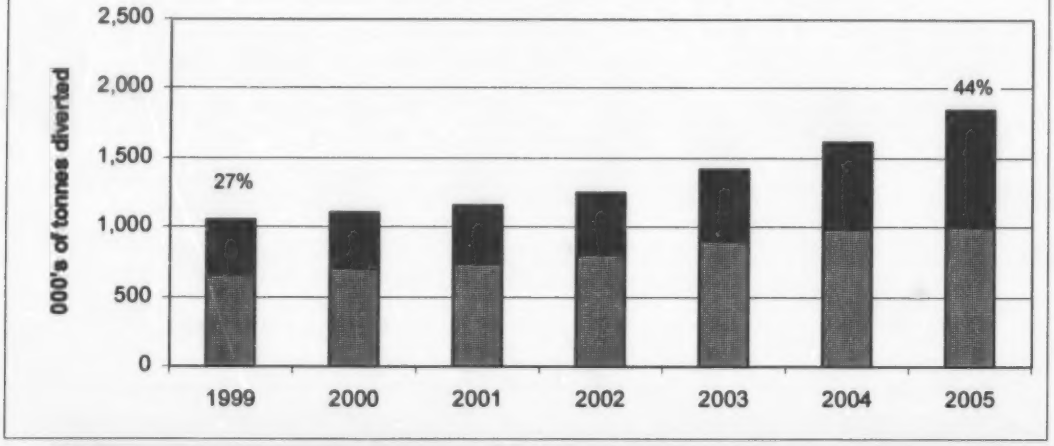
Based on the five-year plans developed by the WDO, the following key conclusions were reached:

> ***Regarding the recycling stream: based on the infrastructure already in place, the identified financial support from industry and assuming the availability of markets to absorb new materials, the 50% Diversion scenario for recycling is aggressive but achievable.***
>
> ***Regarding HSW: although the tonnages are relatively small, and the goal of the committee is ultimately to reduce the generation of HSW, the 50% Diversion scenario for HSW is achievable.***
>
> ***Regarding organics: it is the consensus of the WDO that the 50% Diversion scenario for organics is not achievable within a five-year timeframe and without the immediate development of an equitable cost sharing agreement. The middle ground scenario is considered achievable for the organics stream.***

The incremental difference between the 50% Diversion and Middle Ground scenarios for organics represents a shortfall of 284,000 tonnes. The WDO considered challenging the recycling stream to pick up all or a portion of the difference so that the 50% target could be met. However, as this would mean having to recover virtually 100% of the recyclables in every household in Ontario, and the 50% Diversion scenario for recycling is already thought to be a significant stretch, no additional recycling diversion is likely to be achieved within the five-year period.

Given these conclusions, a hybrid scenario has been developed which combines the 50% recycling scenario and the Middle Ground organic scenario to create a recommended WDO strategy that stretches the current flow residential diversion rate by 2005 to 44%. The cost of this scenario is shown in Figure 5.5.

Figure 5.5
Cost Projections for WDO Recommended Diversion Programs



System Cost $millions

	1999	2000	2001	2002	2003	2004	2005
HSW	$10.0	$10.0	$11.0	$12.5	$14.0	$15.5	$17.0
Organics	$25.0	$27.8	$32.5	$36.9	$57.4	$83.7	$118.5
Recycling	$66.0	$ 41.4	$40.5	$47.0	$53.9	$63.1	$64.0
Total	$101.0	$79.2	$ 84.1	$ 96.4	$125.3	$162.3	$199.5

The projected decline in recycling costs in 2000 are based largely on current prices paid for recovered printed materials. Actual costs in this and future years are subject to a wide range of variables including the quantities recovered, material mix and prevailing market prices.

When calculated using the ministry historic calculation method, the percentage of reduction from disposal relative to 1987, is equivalent to approximately 46%. In turn, when this projected historic residential rate is combined with the reduction rate achieved from the IC&I sector, as is the Ministry of the Environment's protocol for the province-wide measurement system (as described in Section 4.1), a strong possibility exists of achieving the provincial 50% diversion target.

At a projected overall cost per tonne of $97, the recommended WDO scenario is also significantly less expensive than the three stream 50% Diversion scenario. It is interesting to note that the cost for the additional increment of diversion (i.e. the last 6%) jumps to $189/tonne (no credit for avoided disposal). At $97 per tonne average cost, the recommended WDO scenario is also expected to be competitive with future costs to manage waste.

5.5 WDO Program Delivery and Administrative Costs

Section 5.5 describes a recommended diversion path for the WDO for an initial five-year period leading to a projected residential waste diversion rate of 44%. The projected costs of this system for Ontario as a whole, assuming stable materials market conditions, are shown in Table 5.5.

It is agreed that these costs should be shared between industry and municipalities in the proportions recommended by the WDO Funding and Regulations Committee (as outlined in Section 1.1.2).

Given, for example, the projected total net cost for municipal recycling diversion programs in 2001 of $40.5 million, then industry's share of these program costs would be $20.25 million. Industry will, therefore, be required to contribute this amount to the WDO, in cash and/or through agreed to in-kind services (such as advertising space to be provided to municipalities at no charge).

As outlined in the proposed WDO funding allocation model, a portion of the industry cash component (i.e. 10% of the industry 50% share) will be utilized to provide incentives and/or to promote cost efficiency improvements. The remaining funds (and in-kind support) will be allocated among municipalities according to the municipal funding allocation models approved by the WDO.

Those industry sectors whose products are included in the level playing field mechanisms outlined in Section 6 will contribute this level of funding to the WDO, as determined on an annual basis.

In addition to these direct municipal support program costs, there will be additional expenses related to raising funds through an appropriate industry stewardship organization and for the delivery and administration of WDO agreed to programs. These costs will be built into the calculation of fees to be required from industry. Extraordinary program start-up costs such as legal, membership recruitment and registry, research, training, information technology and other program development costs will also be incurred. Allowance should also be made for the fact that it will be inevitable that contributions due from some obligated companies (i.e. small importers) will be delayed. In general, these start-up program delivery and administrative costs can be expected to represent a higher percentage of total program costs in the early years of a program and to decline (as a percentage of the total program budget) in subsequent years, as diversion programs mature. Experience from other jurisdictions has shown that these costs will range from 10% to 20% depending upon the complexity of the program, the level of support services provided by the agency, the maturity of the organization and the programs for which it provides support.

In the case of the WDO program, it is recommended that total industry contributions for the initial years of the program should be budgeted at 120% of the projected annual total municipal support costs. Total annual industry costs, therefore, will be equal to the sum of the municipal diversion program costs and the program delivery and administrative costs.

Detailed industry and WDO financial budget forecasts will be prepared once the key policy decisions have been taken by the province regarding the continuance of the WDO and implementation of the required enforcement mechanisms.

5.6 Options for Raising Funds from Industry

As noted, the projected level of industry financial support required to meet the goals and objectives outlined in this report cannot be met by voluntary industry contributions alone.

As per the guiding principles developed by the WDO, the responsibility for determining the most appropriate mechanisms for raising industry's agreed to share of WDO program costs rests with industry. An ad hoc industry caucus has examined this issue in detail in parallel with the WDO committee planning process. A wide range of alternative options have been examined leading to the recommendations presented in Section 6.

Some of the key issues related to the mechanics of how industry could make contributions related to packaging are summarized briefly. Representatives of the printed-paper and HSW sectors have participated in these discussions but there are many key funding issues unique to these sectors, which they are addressing separately. While appropriate enforcement mechanisms for these sectors are outlined in Section 6, discussions on the specific mechanics of how they will raise their share of agreed to WDO program costs are continuing.

The need for regulation

The representatives of the packaging chain industries agreed unanimously that regulation is essential to any further funding of the WDO.

Who should be the obligated party?

The packaging chain industries debated at length two principal alternatives with consideration given to a wide variety of key issues.

Option 1 - Place the legal obligation on the retailer as the most effective "choke point":

- larger number of obligated companies located in the province
- retailer obligations may include a significant proportion of packaging - own brands, direct imports and in-store packaging
- compliance could be higher if retailers effectively police the chain
- work with retailers to select the most appropriate funding collection mechanism (i.e. sales based, unit based)
- eases brand owner concerns over securing pass through of costs
- recognizes that some small retailers may escape enforcement mechanism
- protects the opportunity to include a fee at point-of-sale to ensure pass through of costs to consumers
- supports national pricing policy strategies of some chains
- avoids any mark-up of levy set higher up in the chain

Option 2 - Place the legal obligation on the brand owner/first importer:

- active support from retailers would be required to make this work
- public registry would be needed to track companies in compliance
- pass through of cost subject to commercial negotiation
- securing payment from in-store packaging suppliers a complication
- cost hidden from consumer; no economic incentive to change
- compliance rate expected to be lower
- final cost to consumer may be higher with mark-ups
- conforms with current proposed Quebec regulatory approach

Options considered for calculating financial contributions:

Retailer As Obligated Entity	Brand Owner As Obligated Entity
Sales based levy	Sales based levy
Unit based levy	Unit based levy
Volume/weight basis	Volume/weight basis
Transaction fee	
Charge at point-of-sale	

The specific retail channels/industry sectors to be included

Retailer As Obligated Entity	Brand Owner As Obligated Entity
Grocery	Packaged consumer goods sold in stores
Mass Merchandise	All packaged consumer goods (IC&I sales included)
Drug stores	In-store packaging
Hardware	
Gas stations	

Possible minimum threshold exemptions:

- by store size
- by annual sales
- quantity of packaging used

Key Conclusions Reached:

1. A level playing field regulation is essential to raise the share of funds expected to be required from packaged goods.
2. Industry must retain responsibility for raising and distributing its share of the costs concerning agreed to WDO programs.
3. The brand owner/first importer is the most appropriate point of obligation.
4. The widest possible net of consumer packaging and packaged consumer products (whether used in the home or similar products sold in IC&I accounts) should be included in the enforcement mechanism to ensure a level playing field and to lower the rate of contribution

required from all participating companies.

5. A sales-based levy represents the most administratively efficient mechanism for calculating individual company contributions.
6. There should be no minimum threshold exemptions set out in the enforcement mechanism but this issue should be addressed within the rules of the designated industry stewardship organization.

Part VI

Long Term Sustainable Funding Mechanisms

6. Long-Term Sustainable Funding Formula

The Memorandum of Understanding, which has guided the work of the WDO through this start-up period requires *"the identification of options for a long-term, sustainable funding formula prescribing appropriate levels of annual contribution and appropriate sources of contribution for long-term continuation of funding for,*

(i) up to 50 per cent of the net operating costs of municipal Blue Box programs and other municipal programs that recycle the same or similar materials, and
(ii) future continuation of the programs set out in Part IV "C" of this MOU and for other programs with purposes similar to those described in this MOU

It shall be assumed that the initial target for the long-term sustainable funding formula will be up to 27 million dollars, of which the LCBO will contribute up to 5 million dollars. Estimates of the necessary totals for the ensuing five years shall be provided along with an evaluation of the trends thereafter".

The WDO is pleased to report that a remarkable degree of consensus has been achieved through our work over the past nine months and the Board of Directors has unanimously approved a comprehensive set of recommendations related to the long-term funding of waste diversion programs.

Both industry and municipalities agree that the overarching objective is to establish self-sustaining municipal diversion programs and to eliminate the need for ongoing WDO financial support. However, given that:

- materials diverted from disposal are subject to fluctuations in commodity markets largely beyond the influence of municipalities;
- a transition period is required to improve the effectiveness and efficiency of existing municipal waste diversion programs;
- considerable program expansion is required to support the provincial goal of 50% waste diversion;
- an extensive public education and promotion effort is required to underpin this effort; and
- financial incentives are required for both industry and municipalities to review existing practices continually and to facilitate waste diversion,

the WDO Board has agreed to a program of financial and technical support for municipalities for a period of five years. The board recommends that the need for any ongoing support and the continuation of the WDO be reviewed at that time.

The board also unanimously agreed that the level of financial support required from industry to implement the recommended WDO programs cannot be raised without the implementation of adequate enforcement mechanisms by the Province of Ontario. While the voluntary agreements implemented through the MOU have succeeded, this level of voluntary support cannot be sustained beyond this initial year. **The proposed shared funding program outlined is conditional upon the province providing the level playing mechanisms required to ensure full industry participation**.

The WDO recognizes that the MOU specifically stipulates the identification of "options" for a long-term sustainable funding formula. While the board has reached broad consensus on how the overall funding program should be structured, the recommendations which follow for each specific waste stream are structured so that considerable flexibility remains for modifying key elements through ongoing discussions with the Ministry of the Environment.

6.1 Municipal Recycling

6.1.1 Key Assumptions

- Eligible materials would include all printed paper and packaging materials encompassed by the regulation and recovered from residential sources by municipally-sponsored recycling programs.
- Materials recovered from industrial, institutional and commercial generators would not be included in WDO funding programs.
- Payments would be made on the basis of materials diverted from disposal to beneficial uses, subject to defined criteria to be established by the WDO.
- Payment calculations would be based on the best available data from previous WDO reporting periods.
- Submission of standardized municipal data, as defined the by WDO, would be a condition of funding.
- The basis for the allocation of funds to individual municipalities would be the proposed WDO Municipal Allocation model developed by the WDO Funding and Regulations Committee which would be further refined by a municipal/industry task group.
- The model would be re-calibrated on annual basis, using the data submitted to the WDO, and with the oversight provided by a municipal/industry task group selected by the WDO for this purpose.

6.1.2 Options Considered

Industry Share

Prior to withdrawing from the WDO process, the Retail Council of Canada argued that the most appropriate and efficient mechanism to ensure sustainable waste diversion programs was to implement municipal waste management user fees. Other industry representatives have also indicated support in principle for this position.

Some industry representatives presented the case for restricting WDO funding to the provision of technical support and noted the significant investment required from industry to allow for the re-processing of recovered waste materials and to re-design products and packaging to minimize waste at source.

Municipal representatives argued that they have little or no control over the quantities or types of wastes that they are required to manage and that strong economic incentives were required to encourage manufacturers to design for recyclability and to stimulate demand for recovered materials in their packaging.

In keeping with the direction given in the MOU, debate on the appropriate share from industry varied between a minimal share and maximum of 50% of the net costs of recycling.

Basis for the Calculation of Net Costs

The issue of calculating the net cost encompassed three key concerns. They were:

1. whether the calculation of net costs should be based on the reported costs for all municipal programs in Ontario or whether the calculation should be restricted only to those municipal programs deemed to be efficient by some objective standard;
2. whether the calculation of net costs should take into consideration the avoided costs of collecting and disposing of these materials as waste; and
3. how to calculate the average value of the "basket of goods" to be used in the net cost calculation in cases where the municipality shares revenue with a contractor, or where the prices received are sub-optimal due to, for example, poor quality control.

Geographic Variations

The WDO analyzed two alternative options concerning geographic variations. They were:

1. calculating the average net costs for recycling of four different program types in the province (large urban, small urban, rural and the north), with WDO payments tied to appropriate efficiency standards for each;
2. refinement of an allocation model first developed for the Quinte, Ontario recycling program. The model would first establish a standard operating cost model for a baseline Ontario recycling program and then use population density, distance from markets, and material mix and composition as the key modifiers in calculating individual municipal payments (see description in 1.1.2).

Efficiency Standards

Both industry and municipal representatives strongly supported the need for efficiency standards in calculating any payments due to municipalities. Options considered included:

1. establishing appropriate efficiency standards for each defined region of the province;
2. varying individual municipal payment calculations relative to their performance by quartile (i.e. the higher the relative efficiency, the higher the WDO payment);
3. setting a "best practice" standard for the province as a whole as the basis for payments out;
4. linking payments to be made by the WDO to other municipal actions such as the adoption of user pay programs;
5. tying any payments considered to investments in improving program performance only;
6. no consideration of efficiency standards; and
7. partial payment based on the net cost calculation, with a portion of the calculated total reserved to promote/reward efficiency.

Sunset Provision

Industry and municipal representatives were sharply divided on the issue of the term of any anticipated funding. Municipal representatives tended to favor an open-ended agreement during which costs were shared until waste diversion programs became self-sustaining. This agreement could be reconsidered if economic conditions changed in future years. Conversely, industry representatives favored a clearly defined period of support by which time such programs would have become locally self-financing.

6.1.3 Preferred Options

The WDO Board of Directors recommends the following:

(i) The net costs of municipal recycling programs would be shared on a 50/50 basis between industry and municipalities for a period of five years, subject to implementation of level playing field mechanisms as outlined below.

(ii) The net cost calculation would not include consideration of avoided collection and disposal costs during this period.

(iii) The net cost of recycling for Ontario as a whole would be calculated on the basis of an annual province-wide survey of all municipal waste diversion program costs based on a standardized methodology of tonnage and cost reporting that the WDO would adopt.

(iv) The municipal funding allocation model that is being developed in cooperation with municipal representatives drawn from the WDO working groups, should be used as the basis for the distribution of WDO funds in support of municipal recycling programs. This is subject to:

- a trial run of the model using the reported 1999 costs for the majority of municipal recycling programs in the province;
- continued refinement of and agreement to the population density factors and the volume-to-weight cost allocation factor which will influence the range of per tonne fees paid to individual municipalities;
- use of an efficiency standard for 'year one' of the WDO program equivalent to 90% of the average Ontario municipal recycling program costs for the previous year;
- reserving 10% of the industry share of funds to be used to promote and recognize increased cost effectiveness in municipal recycling programs and pilot projects; and
- annual review and re-calibration, as required, of the key data used in the model.

(v) The Province of Ontario would adopt a regulation requiring brand owners or first importers of all packaged consumer products sold in the province to recover their packaging material, or alternatively, to be a member in good standing of a WDO-approved industry packaging stewardship organization which takes on this responsibility on their behalf.

The key elements of the proposed packaging regulation are:

1. The brand owners or first importers of packaged consumers products sold in Ontario would be required to implement and finance programs that recover their packaging, independent of municipal waste management programs, to meet specified performance targets, and to provide annual reports on these programs to the WDO.

2. All in-store packaging (i.e. applied at point of sale including bags) would be included in the regulation.

3. An acceptable form of alternative compliance would be membership in good standing of a WDO-approved industry stewardship program that provides financial and technical support to municipalities operating packaging waste diversion programs.

4. Retailers should require certification from suppliers that deliver to, or purchase any packaged products for their stores to ensure that they are included in an approved stewardship program, and that the names of these companies would be maintained in a publicly available registry.

5. Penalties for brand owners and first importers not in compliance would include fines plus any stewardship fees due from previous years.

(vi) That the publisher, importers and/or distributors of designated printed materials sold or distributed in the Province of Ontario recover their materials, or be included as members of a WDO-approved industry stewardship organization.

The key elements of proposed printed material agreement are:

6. Newspapers, magazines, advertising flyers, fine papers, catalogues and directories would be included.

7. Where the cost of recovering these materials through efficient municipal recycling programs is greater than the revenue received from sale of these materials, publishers, importers and/or distributors would contribute up to 50% of this cost differential.

8. An approved industry stewardship organization would determine on an annual basis the appropriate share of costs between newspapers, other printed paper and packaging materials.

9. The proposed WDO funding allocation model would be used in determining the appropriate cost allocation subject to:

   (a) WDO agreement on key model assumptions regarding appropriate material densities, cost allocations by weight/volume, and material revenues used to determine each industry's share of financial contributions to support WDO programs. These assumptions should also be consistent with those used for determining the municipal funding allocation;
   (b) completion of field tests of the proposed model for a minimum of 10 municipalities and for estimating the net municipal recycling costs for newspapers, other printed paper and for packaging for the province as a whole;
   (c) incorporation of mechanisms to take into account surplus revenue from the sale of recovered newspaper in any given year against calculated costs related to newspaper recycling in subsequent years.

10. A credit would be given to offset a portion of the calculated newspaper share of WDO costs in exchange for newspaper advertising space made available at "no charge" to Ontario municipalities and the WDO to promote waste reduction and diversion.

11. The equivalent of at least $1.3 million of the in-kind contribution of advertising space would constitute part of industry's financial contribution to the 50% share of municipal program costs.

12. The printed paper sector would make a financial contribution reflecting a fair share of the WDO/industry stewardship organization's costs related to communications, technical support and administration.

(vii) The Government of Ontario would implement mechanisms to ensure that municipalities establish the programs recommended by the WDO in support of the province's waste diversion objectives and to make the costs of these programs visible to their residents.

The key elements of municipal enforcements mechanisms would include:

1. Municipalities would be required to calculate local waste management and waste diversion services costs and to notify residents of these costs.

2. Municipalities that achieve less than a 50% waste diversion rate (based upon the base year of 1987) by 2005 would be required to implement incentive schemes (such as bag limits or user fees), or alternatively, to have their WDO financial contribution reduced.

(viii) The LCBO would contribute $5 million per year (on behalf of the beverage alcohol industry that it represents at retail) to support the recycling programs of the WDO for the five-year period, including

grant payments to municipalities, LCBO in-store packaging and an appropriate share of the WDO program and administration costs.

6.2 Long-Term Sustainable Funding Mechanisms for Organic Waste Diversion

6.2.1 Key Assumptions

- The work of the WDO Organics Task Group dealt with residential organic waste only, generated by both single family and multi-family homes. IC&I organic waste was not included in the assessment, although it was acknowledged that the quantities of organic waste involved would help support the overall organic waste processing infrastructure, and make it more financially sustainable and viable.
- The costs of a residential waste management system which diverts sufficient organic materials to reach the 50% target (780,000 tonnes/year additional organic waste diversion) will be considerably more than the cost of the existing provincial waste management system.
- It is difficult to identify brand owners for most residential organic materials, therefore, cost-sharing with industry similar to that proposed for recycling and HSW is not considered a viable solution. The province is seen as a more appropriate partner in the sharing of costs for this system.
- Given the increased system cost involved, it is considered essential that the Province of Ontario provide financial support to encourage significantly increased residential organic waste diversion if the provincial target is to be met.

6.2.2 Options Considered

Industry Funding

It is acknowledged that the organic waste stream is significantly different to the recycling or HSW streams, in that brand owners and industry funders are difficult, if not impossible, to link directly to the waste produced. About 34% of the residential organic waste stream consists of leaf and yard waste, for which no brand owner can be identified. An additional 50% is food waste, for which brand owners would be difficult to identify. It is speculated that about 70% of food waste is not readily identifiable by brand owner. Much of this food waste is related to spoilage, table scraps, peelings, etc., largely within the control of the consumer rather than resulting from a manufacturer's operation, which can be modified. The remaining 16% of the residential organic waste stream is compostable sanitary and low-grade papers, for which it may be possible to identify a related brand owner.

It was concluded that brand owners of paper products handled by the composting and/or digestion stream could be reasonably expected to contribute a portion of the costs related to the 16% of the residential organic waste stream made up of their products, although it was argued that adding more difficult-to-manage paper products with plastic components might increase the overall organic diversion system costs.

The task group discussed the concept of raising funds through food brand owners at length, but it was not widely accepted because it was considered unworkable and unfair. The group considered the concept of a levy on all food producers and distributors more workable and concluded that it should be explored further. The task group acknowledges the challenge of getting the food industry to agree to this financial responsibility.

The task group examined the possibility of obtaining funding from the brand owners of products related to lawn and garden care (fertilizer and seed companies, garden centres, etc) who benefit from the existence of

the systems which generate yard waste, but this was also dismissed as being unreasonable and unworkable.

It was agreed generally that no industry funder could be identified for leaf waste, which would logically fall under municipal responsibility.

Provincial Funding

The group agreed that municipalities likely would not be willing to bear the additional $89 million/year cost to roll out the comprehensive organics systems needed to reach a 50% diversion target, given that disposal generally represents a lower cost alternative. In addition, municipalities feel that if 50% waste diversion is a provincial objective, the province should help to pay this incremental cost. The province previously provided significant start-up assistance, and ongoing operating cost assistance to municipalities to get the municipal recycling system off the ground, and the suggestion has been made that the province should consider the same level of support for organics diversion.

Elements of a Funding Formula

Without financial assistance, Ontario municipalities likely will not move forward on implementing organics diversion programs in the current climate of fiscal restraint.

The WDO Organics Task Group identified the need for both start-up capital funding to "prime the pump" and get the organics system infrastructure in place, and also assistance with ongoing operating costs to make the net costs of organics comparable to handling the same waste stream as garbage. However, it cautions that any funding formula must be flexible and not limit the amount that can be funded in one category or the other.

Both private sector and municipal representatives identified the need for flexibility in how the funding was allocated as a key component to success. The funding should be structured so that innovative private sector/public sector partnerships can be arranged to finance the construction and operation of composting and digestion facilities, and also arrange for the capital investments that would be required to purchase new trucks, containers, etc. needed to implement the new systems.

The funding for previous programs (e.g. the early Blue Box funding) was constrained in how capital investments underwritten by the private sector could be supported. Any new funding formula must recognize the innovative approaches and partnerships that municipalities and private businesses now form to implement new programs, and not limit progress in this area by constraining how funding can be obtained.

Geographic Variations

It was acknowledged that small communities, rural areas and many smaller communities in Northern Ontario probably do not perceive management of residential organics as a critical issue at this time. Therefore, the group assumed that these areas would generally continue to rely on the systems currently in place (backyard composting and some leaf and yard waste management). Financial assistance would ensure that these systems could be implemented, where they are not currently in place. In the absence of financial assistance, it is unlikely that any action in this area will be taken.

6.2.3 Preferred Options

The WDO Funding and Regulations Committee reviewed the recommendations made by the Organics Task Group against the funding recommendations developed for municipal recycling and HSW management, and scoped out a set of funding recommendations for organics in more detail. The task group then submitted these recommendations to the WDO Board which approved them for forwarding to the Minister.

With respect to funding of the organics system, the WDO Board recommends that the costs of organic diversion programs should be shared for the initial five-year period in the following manner:

Industry	Province / Municipalities
50% of paper related costs (which comprise approximately 16% of the targeted organic stream)	Each share 50% of remainder of organic diversion system costs

This funding formula is applicable where sanitary and other low-grade papers are included in the compost stream. Industry is not expected to contribute to the costs of food and/or yard and garden waste diversion programs. The preliminary assumption is that sanitary and low-grade papers represent approximately 16% of the targeted organic wastes, with industry contributing up to 50% of the costs of managing paper products. This assumption can be confirmed through waste audits that are being funded by the WDO and are currently underway.

To ensure that municipalities take action to increase significantly organic waste diversion in support of the provincial waste reduction goal, the Government of Ontario will need to implement mechanisms to make certain that municipalities establish organic diversion programs and to make the costs of these programs visible to their residents.

Key elements of municipal enforcement mechanisms that could be included in such a mechanism include the following:

1. extend the minimum waste diversion service requirements currently stipulated in the existing 3Rs Regulations to include expanded organic waste diversion;

2. enact regionally-appropriate bans on organic waste disposal in landfill sites;

3. require municipalities to calculate the costs of local waste management and waste diversion services and to notify residents of these costs; and

4. require those municipalities that achieve less than a 50% waste diversion rate (calculated on the base year of 1987) by 2005 to implement incentive schemes (such as bag limits or user fees), or alternatively, to have their WDO financial contribution reduced.

It is also considered essential to address the lifecycle impacts of organic waste diversion in more detail, to ensure that in each case the system chosen by a municipality is the most financially and environmentally efficient. A review of the requirement to provide for the separate collection of organics wastes in northern municipalities should form part of this process.

Market development for compost products is absolutely essential to the success of any comprehensive organics strategy in Ontario, and must form an integral part of the ongoing efforts to divert organics from disposal. Markets can be encouraged through mandatory procurement requirements by the provincial and

municipal governments to use compost from municipal organics programs in government construction projects, and through the encouragement of market development in other areas. The WDO has allocated significant resources to market development for compost in Rounds One and Two funding.

The funding for residential organic waste diversion systems could be disbursed in a number of ways. Some key points identified by WDO members are noted below:

- A flat fee per tonne diverted could provide sufficient incentive to encourage many municipalities to move forward with organic diversion systems. If municipalities know that they are assured a secure revenue stream (e.g. $50/tonne of organic waste diverted), this will provide sufficient financial security to plan for a long-term organics diversion system.

- Funding should be paid to municipalities directly, but not constrain them in cases where collection and processing is contracted to the private sector, and, therefore, capital investments are rolled into the operating costs charged to municipalities.

- The private sector are considered an essential partner to the success of a comprehensive organics diversion strategy, therefore, any discussions on future funding formulas must include private sector waste management companies which now provide collection and processing services to many Ontario municipalities.

- The funding should be tied to incentives to increase diversion, but should be carefully constructed not to discourage municipalities which are at low levels of diversion at this time. Some municipalities felt that the formula should be structured so that higher amounts are paid to municipalities with high diversion levels. There was a concern that this would discourage some municipalities which do not have comprehensive systems in place at this time. An equitable approach to finding a balance between these two points needs to be identified.

The ultimate funding formula for organics will reflect the fundamental differences between organics, where few brand owners can be identified, and recycling and HSW, where the fundamental principal is one of shared responsibility.

6.3 Long Term Sustainable Funding Mechanisms For HSW Management

6.3.1 Key Assumptions

- On an interim basis, the materials to be included in a WDO-supported HSW management program would include those identified by the Draft Criteria and Sample List of Products developed by the WDO HSW Task Group and included as Appendix B of the HSW Interim Five-Year Plan.

- The materials included on this list would be reviewed on an annual basis. Over the longer term, materials to be included would be defined by scientific criteria (such as those criteria being developed by the Canadian Standards Association [CSA] Household Hazardous Waste [HHW] Definition Project) or have received joint agreement that they need special care (i.e. latex paint).

- HSW materials recovered from industrial, institutional and commercial generators would not be included in WDO funding programs.

- The net costs of HSW programs across the province would be calculated by the WDO annually based on data submitted by municipalities. The WDO program budget for a given year would be based on the best available cost data from the previous WDO reporting period.

- Submission of standardized municipal data, as defined by the WDO, would be a condition for funding.

- A municipal HSW funding allocation model will be developed by the WDO and will include incentives to encourage the recovery of only those materials requiring special care and which reward program operating efficiencies.

- The funding model will be re-calibrated on an annual basis, using the data submitted to the WDO and with oversight provided by a municipal/industry task group selected by the WDO for this purpose.

- Communication and education programs which encourage consumers to purchase, use and dispose of HSW products properly (such as the proposed BUD program—Buy responsibly, Use it up and Dispose of the remainder responsibly) would be an essential element of any WDO-supported HSW program.

6.3.2 Options Considered

The task group examined five alternative approaches for the long-term funding of HSW programs:

Status Quo

Municipalities currently pay for the costs of HSW management from their local tax base. The resources available for this task vary considerably by municipality and the existing network of HSW depots has developed on an ad hoc basis. The types of materials accepted by these programs also vary with no clear scientific criteria for defining those which require special care. No direct incentives exist for the manufacturers of these products to re-formulate or reduce the quantities of these products entering the municipal waste stream.

Municipalities have no direct influence over the types and quantities of HSW materials disposed of by residents and the costs of managing these materials is acknowledged to be very high in relation to other materials in the municipal waste stream (i.e. disposal costs currently average $1,300/tonne). In some cases, empty packaging that could be managed through other municipal diversion programs are incurring unnecessarily high costs where they are managed through HSW depots.

Municipal User Pay Fees

The Retail Council of Canada (with the support in principle of other industry sectors and some municipalities) proposed the adoption of user fees as the most appropriate and effective mechanism for the long-term funding of all elements of municipal solid waste management systems. It is argued that this approach provides the most efficient and effective mechanism to make residents aware of the costs of waste management services, provides financial incentives to encourage increased diversion and sends

indirect signals to manufacturers to minimize the production of HSW materials in response to consumer purchasing practices.

100% Industry Funding

The task group also considered alternative stewardship approaches, such as the HHW regulations in British Columbia, which require industry to establish, operate and fund the full costs of an industry self-managed program. It was argued that this approach provides maximum flexibility for industry on how best to steward their products and provides the strongest economic incentive to internalize these costs or to reduce or reformulate HSW products. However, this approach provides no incentive for consumers to change their purchasing, usage and disposal habits.

Functional Split Model

In essence, municipalities would be responsible for funding all functions related to HSW collection and administration. Industry would have full financial responsibility for post-collection treatment of HSW residuals.

Municipal representatives determined that this approach would provide no ongoing incentives for municipalities to continue HSW recycling, reuse and other innovative treatment programs that would reduce total HSW management system costs. Concerns were also raised that the costs falling to municipalities could be greater than 50% of total system costs as the quantities requiring disposal declined over time.

Industry favored this approach given the ability to influence the final treatment and disposal options chosen by municipalities and the clarity provided by clearly defined roles and responsibilities. Industry also expressed concern that they could not exert any direct influence over municipal decisions regarding the HSW collection management programs or their administrative costs.

The discussion also highlighted that industry was at greater financial risk if no financial incentives were put in place to assist municipalities with cost reduction programs.

Shared Model

Through the "shared model" approach, industry and municipalities would share all administration, collection and disposal costs equally. A 'BUD' communications campaign would also be implemented on a shared-cost basis. Municipalities would be encouraged to seek start-up capital for new HSW programs through existing provincial and federal infrastructure grant programs. The capital costs of existing HSW programs, amortized on an annual basis, would be included in the municipal cost calculations for existing programs.

The discussion led to agreement of the need, in principle, for performance incentives for municipalities but more analysis was required to ascertain how these might be structured.

6.3.3 Preferred Options

The WDO Board of Directors recommends the following:

(i) <u>The cost of HSW management programs should be shared on a 50/50 basis between industry and municipalities for a period of five years, subject to implementation of a level playing field mechanism as outlined below.</u>

(ii) These costs should include a communication and education campaign promoting the responsible purchase, usage and disposal of these products.

(iii) Municipalities should retain operational responsibility for local HSW administration, collection and arranging for post collection treatment.

(iv) A WDO municipal funding allocation model should be developed which provides financial incentives for municipalities and industry to reduce program costs in HSW collection and post-collection treatment.

(v) The financial savings achieved through these actions should be equalized between industry and municipalities in calculating required industry financial contributions in the following year.

(vi) The Province of Ontario should adopt a regulation requiring brand owners or first importers of all designated HSW products sold in the province to recover designated residual HSW materials, or, alternatively, to be a member in good standing of a WDO-approved industry stewardship organization which takes on this responsibility on their behalf.

The key elements of the proposed HSW regulation are to:

1. require brand owners or first importers of consumer HSW products sold in Ontario to implement and finance programs to manage designated post consumer residual materials, independent of municipal waste management programs, and to provide annual reports on these programs to the WDO;

2. include in the definition of HSW materials those materials agreed to by the WDO HSW Task Group (included as Appendix B of the HSW Interim Five-Year Plan);

3. agree that an acceptable form of alternative compliance would be membership in good standing of a WDO-approved industry stewardship program providing financial and technical support to municipalities operating HSW waste management programs;

4. retailers should require certification from their suppliers that all designated HSW products sold in their stores are included in an approved stewardship program; and

5. establish penalties for brand owners and first importers not in compliance that would include fines plus any stewardship fees due for previous years.

Part VII

Future WDO Roles and Responsibilities

7. Future Roles & Responsibilities of the WDO

The two most frequently stated criticisms of the WDO process to date have been:

1. The process is moving too fast to allow for the participation of and consultation with all of the key stakeholders and to allow adequate time for more careful research and analysis.

It is the WDO's assessment that:

(a) Many of the key issues tackled in this report have been under discussion in Ontario for more than a decade.
(b) The 100+ participants in the WDO process represent the widest possible cross-section of this experience yet assembled in Ontario to try to *resolve* these issues.
(c) The limited time frame set out in the MOU ensured that this participation was focused, intensive and effective.
(d) The specific details of the WDO's work would have been improved by having had more time however, the broad recommendations and conclusions reached by the WDO would still stand.

2. The scope of the WDO is far too narrow in that it is focused solely on issues related to the diversion of only part of the residential waste stream.

It is the WDO's assessment that this is a valid and important criticism that should be addressed if the WDO is to continue. In particular:

(a) The stated provincial goal is to reduce the per capita disposal of waste in the Province of Ontario by 50%, relative to a 1987 baseline. This goal encompasses all wastes, not just residential wastes.
(b) By focusing solely on the diversion of recyclable residential materials, compostable organics and designated HSW products, the legitimate charge has been made that the MOU/WDO has pre-determined that recycling, composting and the separate collection and management of HSW are *de facto* always the best environmental and economic solutions. Many participants in this process have argued that the WDO should be charged with examining other waste management options including reduction at source, energy recovery and landfill for appropriate materials and for some regions of the province.
(c) Recommendations have been made throughout this report regarding the need for a lifecycle inventory of the environmental costs and benefits of proposed recycling and organic diversion, and HSW management programs. The parameters and procedures for these assessments will need to be carefully defined.
(d) The concept of extended industry responsibility for waste, and the extent of that responsibility remains a contentious issue. Some industry sectors have refused to participate in the WDO process and fundamentally reject this concept.
(e) There is widespread agreement among municipalities, industry and non-governmental organizations that user pay programs are essential to achieving significantly increased waste diversion and to making residents aware of the true costs of waste management. However, perceived operational difficulties (especially in large cities) and a lack of political will at the municipal and provincial levels of government present significant barriers to widespread adoption of this mechanism to make waste diversion programs more effective and sustainable over the long term.
(f) Various participants have suggested a laundry list of other waste materials that should be addressed by the WDO (including tires, fluorescent light tubes, textiles, waste electrical and electronic products and various components of IC&I wastes).

The WDO believes that the "relatively" narrow focus established for the WDO in this initial year was appropriate. It has allowed a widely disparate group of individuals to make significant progress on a number of contentious issues that have been debated in Ontario *ad nauseum*.

That said, the WDO recommends that if the organization is to be established as a permanent entity, its scope should be extended, once the programs and activities recommended in this report have been implemented in large measure, to address these and other key concerns related to the development of an environmentally effective, economically sound, sustainable waste management system for the Province of Ontario.